TEERTHANKER MAHAVEER UNIVERSITY

(Established Under Govt. Of U.P. Act No. 30, 2008)
Delhi Road, Bagarpur, Moradabad. (U.P)

Study and Evaluation Scheme
Of
Master of Physiotherapy
SUMMARY

Programme : **Master of Physiotherapy**
Duration : **Two Years Full Time (Semester System)**
Medium : **English**
Minimum Required Attendance : **75 %**
Maximum Credits : **73**

Minimum Credits Required For Degree : **73**

Assessment (Theory) :

Internal	External	Total
40	60	100

Internal Evaluation (Theory Papers) :

CLASS TEST I	CLASS TEST II	CLASS TEST III	ATTENDENCE	ASSIGNMENT	TOTAL
Best 2 out of 3					
10	10	10	10	10	40

Evaluation (Lab):

Internal	External	Total
50	50	100

Duration of Examination :

Internal	External
$1^{1/2}$ hrs	3 hrs.

To qualify the course a student requires to secure a minimum of 50% marks in each subject including semester end examination and teacher's continuous evaluation (i.e. both internal and external).The student who secures less than 50% of marks in a course shall be deemed to have failed in that course and must secure 50% of marks on an aggregate to clear semester. A student has to pass mandatorily in Theory & Lab separately. If a candidate fails in Theory, he/she will have to reappear in Theory examination, but if one fails in Lab; he/she has to appear in both Theory and Lab of the respective subject.

A student will be promoted to the second year (third semester) only if s/he has failure in not more than 2 (two) courses in first year (cumulatively in first and second semester). Student with more than 2 (two) re-appear shall have year back.

Note: ***For internal assessment purpose, there will be three class tests in a year and best 2 of three tests will be considered for the final result.***

Question Paper Structure

1. *The question paper shall consist of six questions. All six are compulsory. First question shall be of short answer type (not exceeding 50 words). Question No. 1 shall contain 8 parts representing all units of the syllabus and students shall have to answer any five (weightage 2 marks each).*
2. *Remaining five questions will be one from each unit with internal choice. The student has to answer one of the two in each question. The weightage of Question No. 2 to 6 shall be 10 marks each.*
3. *In case of a course with four units the fifth question can be from any unit or combination of units.*

Study and Evaluation Scheme

Programme: Master of Physiotherapy

SEMESTER - I

S.No.	Course name	Course Code	Credits				Evaluation		
			L	T	P	Overall	Internal	External	Total
1.	Research Methodology & Biostatistics	MPT110	4	-	-	4	40	60	100
2.	Exercise physiology	MPT111	3	-	-	3	40	60	100
3.	Electrophysiology	MPT112	2	-	-	2	40	60	100
4.	Personality Development & Communication-I	MPT149	2	-	2	3	40	60	100
5.	Clinical training	MPT161	-	-	16	8	50	50	100
			11	-	18	20	210	290	500

SEMESTER - II

S.No.	Course name	Course Code	Credits				Evaluation		
			L	T	P	Overall	Internal	External	Total
1.	Biomechanics	MPT210	2	-	-	2	40	60	100
2.	Physical and functional diagnosis	MPT211	3	-	-	3	40	60	100
3.	Physiotherapeutics	MPT212	3	-	-	3	40	60	100
4.	Personality Development & communication-II	MPT249	2	-	2	3	40	60	100
5.	Clinical training	MPT261	-	-	16	8	50	50	100
			10	-	18	19	210	290	500

Study and Evaluation Scheme

Programme: Master of Physiotherapy

SEMESTER - III

S.No.	Course name	Course Code	Credits				Evaluation		
			L	T	P	Overall	Internal	External	Total
1.	Clinical training	MPT361	-	-	18	9	50	50	100
2.	Ethics and Pedagogy	MPT314	3	2	-	4	40	60	100
ELECTIVES *(Candidate shall select the course with corresponding Lab as per the choice of specialization)*									
3.a.	Cardiopulmonary disorders–I	MPT315	4	-	-	4	40	60	100
3.b.	Cardiopulmonary disorders–I (Lab)	MPT365	-	-	2	1	50	50	100
4.a.	Neurological Disorders-I	MPT316	4	-	-	4	40	60	100
4.b.	Neurological disorders–I (Lab)	MPT366	-	-	2	1	50	50	100
5.a.	Musculoskeletal Disorders-I	MPT317	4	-	-	4	40	60	100
5.b.	Musculoskeletal disorders–I (Lab)	MPT367	-	-	2	1	50	50	100
6.a.	Sport Disorders-I	MPT318	4	-	-	4	40	60	100
6.b.	Sport disorders–I (Lab)	MPT368	-	-	2	1	50	50	100
			7	2	20	18	180	220	400

Study and Evaluation Scheme

Programme: Master of Physiotherapy

SEMESTER – IV

S.No.	Course name	Course Code	Credits				Evaluation		
			L	T	P	Overall	Internal	External	Total
1.	Administration & Management	MPT410	2	-	-	2	40	60	100
2.	Clinical training	MPT461	-	-	18	9	50	50	100
ELECTIVES *(The choice of elective shall be same as that chosen in III semester)*									
3.a.	Cardiopulmonary disorders-II	MPT415	4	-	-	4	40	60	100
3.b.	Cardiopulmonary disorders–II (Lab)	MPT465	-	-	2	1	50	50	100
4.a.	Neurological disorders–II	MPT416	4	-	-	4	40	60	100
4.b.	Neurological disorders–II (Lab)	MPT466	-	-	2	1	50	50	100
5.a.	Musculoskeletal disorders–II	MPT417	4	-	-	4	40	60	100
5.b.	Musculoskeletal disorder–II (Lab)	MPT467	-	-	2	1	50	50	100
6.a.	Sport disorders–II	MPT418	4	-	-	4	40	60	100
6.b.	Sport disorders–II (Lab)	MPT468	-	-	2	1	50	50	100
			6	-	20	16	180	220	400

Evaluation Scheme for Lab/Theory (Internal & External)

Internal Evaluation: Lab (50 Marks)

The internal evaluation would be done by the internal Examiner based on the experiment conducted before and during the examination.

PRACTICAL PERFORMANCE DURING THE SESSION (25 MARKS)		ATTENDANCE (10 MARKS)	EXPERIMENT/ SHORT CASE (5 MARKS)	VIVA (10 MARKS)	TOTAL INTERNAL (50 MARKS)
EXPERIMENT/CASE (15 MARKS)	STUDENT MANUAL (10 MARKS)				

Internal Evaluation Theory: (40 marks)

BEST TWO OUT OF THREE CTS	ATTENDANCE	ASSIGNMENT/PRESENTATION	TOTAL
20	10	10	40

External Evaluation: Lab (50 marks)

The external evaluation would be done by the external Examiner based on the experiment conducted during the examination.

EXPERIMENT/LONG CASE (30 MARKS)	STUDENT MANUAL (10 MARKS)	VIVA (10 MARKS)	TOTAL EXTERNAL (50 MARKS)

Evaluation Scheme for Personality Development & Communication - I & II

Internal evaluation:

BEST TWO OUT OF THREE CTS	ATTENDANCE	ASSIGNMENT/PRESENTATION	TOTAL
20	10	10	40

External evaluation*:

COMPREHENSION WRITTEN TEST (20 marks)	VIVA (40 marks)				TOTAL (60 MARKS)
	Content (10 marks)	Dressing and Grooming (10 marks)	Confidence (10 marks)	Question Responsiveness (10 marks)	

*The external evaluation would be done by the external Examiner from within the University

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DEPARTMENT OF PHYSIOTHERAPY

Format for Internal Evaluation of Clinical Training (Master's Programme)

Name of candidate: _____

Program: _____

Semester: _____

Topic of Presentation: _____

Date: _____

	Parameters	Maximum marks	Obtained marks
1.	Body Language/voice modulation	5	
2.	Knowledge of the Topic/case	5	
3.	Content of the presentation	5	
4.	Confidence & Attitude	5	
5.	Quiz	5	
Total		25	

Evaluator:

Name:

Designation:

Department:

Student shall be evaluated in the above mentioned format by the team of faculty members for curricular activities such as seminar, journal presentation & case presentation. Each student should present minimum ten seminars, ten case presentations & ten journal presentations. Student should have the copy of this format which should be provided to each member of the team of evaluators during every presentation. The average marks of each cycle shall be considered for final internal assessment out of twenty five; ten marks shall be that of attendance, five marks of short case & ten marks of final viva.

MPT SEMESTER - I
EXERCISE PHYSIOLOGY
(Minimum Hours- Theory: 60 hrs)

Course code: MPT111 **L-3, T-0, P-0, C-3**

Course objective:

In this course, the student will learn about the principles, various methods of exercise testing, prescription and training. They will also learn about various components of nutrition and its importance, energy transfer and expenditure.

Course contents:

UNIT I

1. Principles of Exercise Physiology

   a. Sources of Energy, Energy Transfer and Energy Expenditure at rest and various physical activities.
   b. Role of Aerobic and Anaerobic mechanism during exercises.
   c. Acute effects of High, Burst and Short duration exercises.
   d. Acute effect of Steady level exercise on following parameters – Blood flow, Heart rate, Blood Pressure, Pulse Rate, Respiration Rate, Acid Base Balance, Body Temperature, Fluid-Electrolyte Balance and Substrate Utilization.

UNIT II

1. Physiology of Movement
2. Responses and Adaptations of various systems to Exercise and Training.
3. Environmental influence on Performance.
4. Special Aids to Performance and Conditioning.

UNIT III

1. Energy consumption, nutrition and caloric balance:

   a. Body composition assessment, physique, performance, and physical activity,
   b. Over-weight, obesity and weight control.
   c. Energy sources
   d. RDA by ICMR Guidelines
   e. Diet for Pediatric, lactating mothers and geriatric population.

UNIT IV

1. Considerations of Age and Gender in exercise and training.
2. Exercise prescription for health and fitness with special emphasis to cardiovascular disease, Obesity, cancer and Diabetes.

UNIT V

1. Fatigue assessment and scientific organization of work-rest regimes to control fatigue.
2. Energy Expenditure:
    a. Expenditure during rest, confinement during illness and various levels of Physical
    b. Exercises, factors influencing energy uptake and substrate utilization.
    c. Measurement of Human energy expenditure, individual differences and
    d. Measurement of energy capacities.
    e. Energy expenditure during walking, jogging, running and swimming.

RECOMMENDED STUDY MATERIAL:

TEXTBOOKS:

1. Katch: Exercise physiology, energy nutrition and human performance.
2. Scott K Powers: Theory and application to fitness and performance.

REFERENCE BOOKS:

1. Axen: Illustrated principles of exercise physiology.
2. Frank: Exercise physiology for health care professionals.
3. Tudor Hale: Exercise physiology – a thematic approach.
4. George Brooks: Exercise physiology -Human bioenergetics and its application.

Note: Latest edition of suggested books are recommended

MPT SEMESTER - I
ELECTROPHYSIOLOGY
(Minimum Hours- Theory: 40)

Course code: MPT112 **L-2, T-0, P-0, C-2**
Course objective:

In this subject student shall learn about basic principles and functioning of various electrotherapeutic modalities.

Course contents:

UNIT I

1. Anatomy and physiology of Action potential, peripheral nerve, muscle and neuromuscular junction.
2. Electrical properties of muscle and nerve.

UNIT II

1. Characteristics and components of Electro therapeutic stimulation systems and electrophysiological assessment devices.
2. Instrumentation and application of Neuromuscular Electrical Stimulation (NMES).

UNIT III

1. Muscles plasticity in response to electrical stimulation.
2. Electrical stimulation and its effects on various systems.
3. Clinical Electro physiological testing.

UNIT IV

1. Recent advances of various therapeutic modalities.

RECOMMENDED STUDY MATERIAL:

TEXTBOOKS:

1. Physical rehabilitation by Susan B, O' Sullivan, Thomas J. Schmitz.
2. Electrodiagnosis in disease of nerve and muscles by Kimuraj J, F A Davis, Philadelphia.
3. Guyton : Textbook of physiology
4. Chatterjee: Textbook of physiology.

REFERENCE BOOKS:

1. Principles of anatomy and physiology by Tortora; 8th edition; Harper & Row Pub.
2. Anatomy & Physiology by Ross & Wilson's, 8th edition, Churchill Livingston.
3. Robert: Fundamentals of sensory physiology.
4. Melzack and Wall: Text book of pain.
5. Bickerstaff's neurological examination in clinical practice.
6. Neurological differential diagnosis – John Patten.

Note: Latest edition of suggested books are recommended

MPT SEMESTER - I
RESEARCH METHODOLOGY & BIOSTATISITCS
(Minimum Hours- Theory: 40 hrs)

Course code: MPT110 **L-5, T-0, P-0, C-5**

Course objective:

In this course, the student will learn about various phases of research that are needed to conduct research and publish research papers , statistical implications towards problems of human health and disease, with the ultimate goal of advancing the public's health.

Course contents:

UNIT I: Research Methodology:

1. **Introduction to Research methodology**: Meaning of research, objectives of research, Motivation in research, Criteria for good research.
2. **Literature Review** - Importance & Steps.

UNIT II:

1. **Measurement & scaling techniques**: Meaning, importance, nominal, ordinal, ratio and interval scales, errors in measurement, **Scaling Techniques**: arbitrary scale, Thurstone differential scale, Likert-scale, Guttman - scale.
2. **Sampling**: Probability sampling methods - Simple random, systematic, stratified, cluster and non-probability sampling methods – purposive, quota, snowball sampling, sampling and non-sampling errors, determining the sample size.
3. **Methods of data collection**: Primary and secondary sources of information, collection of primary information through questionnaires & schedules, Difference between questionnaires & schedules.

UNIT III:

1. **Citing the sources:** plagiarism, writing the references & bibliography, APA, Harvard and Vancouver Style of citation.

UNIT IV: Descriptive statistics:

1. **Measures of Central Tendency & Dispersion**: Need for measures of central Tendency, Definition and calculation of Mean, Median & Mode in ungrouped and grouped data, standard deviation, variance. Coefficient of variation.
2. **Correlation & regression:** Concept of correlation, Karl Pearson's correlation coefficient for two variables, Properties of correlation coefficient, Concept of regression, linear regression lines for two variables, regression coefficients and its properties.

UNIT V: Inferential Statistics:

1. Testing of Hypotheses Procedure, Null and alternative hypothesis, Level of significance, Degrees of freedom, type I & type II errors.

2. **Student t-test**: for dependent and independent samples.
3. **Chi-square test:** Properties, Testing the goodness of fit, independence of two variables.
4. **Analysis of variance:** Assumptions, applications and procedure of one way & two way ANOVA.

RECOMMENDED STUDY MATERIAL:

TEXTBOOKS:

1. Rehabilitation research – Elizabeth Domholt.
2. Research for physiotherapist-Carolin hicks
3. Methods in Bio-Statistics, by B.K. Mahajan,6 Ed. 1997

REFERENCE BOOKS:

1. Darlene – Documenting functional outcomes in physical therapy.
2. Diana-Research for health professionals.
3. Elements of Health Statistics: Rao.N.S.N.
4. An introduction of Biostatistics: Sunder Rao. P.S.S.
5. Research in Physical Therapy- Christoper E.Bork
6. Nursing Research: Principles and methods- Denis E.Polit

Note: Latest editions of suggested books are recommended

MPT SEMESTER - I

PERSONALITY DEVELOPMENT & COMMUNICATION- I
(Minimum Hours- 40 hrs)

Course code: MPT149 **L-2, T-0, P-2, C-3**

Course objective:

The objective of the course is to impart basic knowledge of English Language and Communication, impart soft skills, personality development & improve reading and speaking skills.

Course Content:

UNIT I

Overview of Fundamentals of English Language

a) Parts of Speech, articles, tenses
b) Basic Auxiliaries and Modals
c) Synonyms, antonyms, homophones, homonyms, one word substitution

UNIT II

a) Simple sentence construction, spotting errors & correction of sentences
b) Complex & compound sentences
c) Active & passive sentences
d) Commonly used idioms & phrases

UNIT III

Confidence, Presentability, Etiquettes & Manners

a) Body language, facial expression, eye contact, gesture, posture, tips to have appropriate body language
b) Grooming & dressing sense
c) Etiquettes & manners: demonstration of social etiquettes, telephonic etiquettes , dining etiquettes , etiquettes to handle cultural differences, etiquettes of effective conversation , medical professional & patient conversation.

UNIT IV

Reading & Speaking Skills

a) Reading newspaper & presenting the news report in the next class.(minimum 5 news reports by each student)
b) Reading stories on internet & summarizing it to the class. (minimum 5 stories by each student)
c) Selection of random 50 medical terms of the choice of the student & discussing them in the class.

RECOMMENDED STUDY MATERIAL
REFERENCE BOOKS:

1. English Grammar Composition & Usage by J.C. Nesfield, Macmillan Publishers
2. The Business letters by Madan Sood, Goodwill Publishing House, New Delhi
3. Communication Skills by Sanjay Kumar &PushpLata, Oxford University Press
4. Taylor Grant, *English Conversation Practice*, Tata McGraw Hill New Delhi.
5. Mohan Krishna and Banerji Meera, *Developing Communication Skills*, MacMillan India Ltd., Delhi.

Note: Latest edition of suggested books are recommended.

MPT SEMESTER - II
PHYSICAL AND FUNCTIONAL DIAGNOSIS
(Minimum Hours- Theory: 60)

Course code: MPT211 **L-3, T-0, P-0, C-3**

Course objective:
Through this course student shall be able to acquire knowledge about various assessment tools for cardiac, neurological and musculoskeletal assessment.

Course contents:

UNIT I

1. Pain:
    a. Historical perspective, Modulation theories of pain, and classification of pain, clinical manifestations.
    b. Patient interview, body charts, and pathological assessment (Questionnaires and Pain Rating Scales).

UNIT II

1. ICF & SOAP Format of assessment.
2. Clinical examination in general and detection of movement dysfunction.
3. Principles of pathological investigations and imaging techniques related to neuromuscular, skeletal and cardiopulmonary disorders with interpretation.
4. Developmental screening, motor learning –motor control assessment.
5. Anthropometric measurements.

UNIT III

1. Physical fitness assessment by Range of motion, Muscle strength, endurance and skills, Body composition and energy consumption, Fitness test for sports.
2. Evaluation Methods, Special tests and Scales used in Musculoskeletal, Neurological and Cardiopulmonary disorders.
3. EMG, Biofeedback, NCV, EEG, Evoked Potentials.
4. Biophysical measurements, physiotherapy modalities, techniques and approaches.

UNIT IV

1. Aids and appliances, adaptive functional devices to improve movement dysfunction.
2. Physical disability evaluation and disability diagnosis.
3. Gait analysis and diagnosis.
4. Exercise ECG testing and monitoring.
5. Pulmonary function tests and Spirometry

RECOMMENDED TEXTBOOKS/REFERENCE BOOKS:

1. Melzack and Wall: Text book of pain.
2. Physical therapy for children – Campbell Suzann K, W.B Saunders, Philadelphia 1994

3. Physical management of Multiple Handicapped – Freser, William & Wilkins, Baltimore.

4. Orthotics in neurological rehabilitation – Aisen, Demos Publication, New York 1992.
5. Manual of nerve condition velocity techniques – De Lisa, Raven press, New York, 1982.
6. Electrodiagnosis in diseases of nerve and muscle – Kimura J, F.A Davis, Philadelphia.
7. Gaits analysis – Perry J., Black Thorofare, New Jersy, 1992
8. Measurement in physical therapy – Churchill, Livingstone, London 1988.
9. Cardiopulmonary symptoms in physiotherapy practice – Cohen M., Churchill, Livingstone, London 1988
10. Clinical application of ventilatory support – Kinby Churchill, Livingstone, New York 1990

Note: Latest editions of suggested books are recommended

MPT SEMESTER - II
PHYSIOTHERAPEUTICS
(Minimum Hours- Theory: 60)

Course code: MPT212 **L-3, T-0, P-0, C-3**

Course objective:

In this subject student shall learn about management of pain, obstetric and gynecological, geriatric conditions and psychiatric patients. At the end student shall be able to device exercise protocol for the same based on the basic principles of exercise and electrotherapy, while keeping age related physiological changes into consideration.

Course contents:

UNIT I

1. Theories of motor control and motor learning.
2. Theories of aging.

UNIT II

1. Cardiopulmonary medications and their effect on activity performance.
2. Exercise planning and prescription.
3. Use of Exercise therapy techniques and application on various types of cases.
4. Application of electrotherapy techniques on patients, monitoring of dosages and winding up procedure.
5. Ergonomic aspects of exercise on oxygen, energy consumption MET value of various exercises and activity.
6. Effect of aerobic, anaerobic as well as Isometric and Isokinetic exercises on general functions of human body.
7. Physiotherapy in psychiatric conditions.

UNIT III

1. Massage, Mobilization and Manipulation
2. Principles of Manual therapy – different schools of thought
3. Principles of Various Neurological approaches.
4. Yoga:
   a) Concept of Yogic Practices, Asanas, Pranayama, Meaning & benefits of Bandha and mudras, Kriyas.
   b) Meaning & concept of Meditation, Yoga and Modern Education

UNIT IV

1. General Guidelines to be followed in Cardiac Rehabilitation, Pulmonary Rehabilitation, Burns Rehabilitation and Cancer Rehabilitation Protocol.
2. CPR, monitoring systems, AEDs and defibrillators and artificial respirators.
3. Physiotherapy in common conditions of skin.
4. Physiotherapy following Plastic Surgery.
5. Maternal and child care and physiotherapy following Obstetric and Gynecological Disorders.

RECOMMENDED TEXTBOOKS/REFERENCE BOOKS:

Textbooks:

1. Yoga Therapy – Kuvalayananda Swami and Vinekar, popular prakashan, Bombya, 1992
2. The Growth chart – WHO, Geneva, 1986
3. Orthotics in neurological rehabilitation – Aisen, Demos Publication, New York 1992
4. Manual of nerve condition velocity techniques – De Lisa, Raven press, New York, 1982
5. Electrodiagnosis in diseases of nerve and muscle – Kimura J, F.A Davis, Philadelphia.
6. Mobilization of the extremity joints – Kaltenbore, Harper and Row, Philadelphia.1980
7. Chest physiotherapy in Intensive care unit – Makezie, Willams & Wilkins, Baltimore.
8. Cardiopulmonary symptoms in physiotherapy –Cohen M, Churchil, Livingstone, London-1988.

Reference books:

1. Physical rehabilitation: assessment and treatment – O'Sullivan, F.A Davis, Philadelphia 1994.
2. Neuro-rehabilitation – Farber, W.B Saunders, Philadelphia 1982
3. Orthopaedic physical therapy- Donatteli, London Churchill Livingstone, 1994.
4. Gaits analysis – Perry J., Black Thorofare, New Jersy, 1992
5. Bio – feedback- A practitioners guide - Kerb D, Guiford press.
6. Cardiac rehabilitation – Amundsen l.R, Churchill, Livingstone, London 1988
7. Obstetrics and gynaecologic physical therapy – Wilder Elnine, Churchill, Livingstone, NewYork 1994.

Note: Latest editions of suggested books are recommended

MPT SEMESTER - II
BIOMECHANICS
(Minimum Hours- Theory: 40)

Course code: MPT210 **L-2, T-0, P-0, C-2**

Course objective:

In this course, the student will learn about the basic concepts of human movement, joint mechanics, muscular mechanics and its application of various biomechanical principles towards the practice of physiotherapy in patients. They will also learn about the abnormal mechanics of joints, muscles and nerves.

Course contents:

UNIT I

1. Forces, Equilibrium, Levers: laws & mechanical advantage.
2. Applied mechanics in the evaluation procedures.

UNIT II

1. Biomechanics of Tissues and structures of the musculoskeletal system: Material properties of bones and other connective tissue, viscoelasticity, creep and stress relaxation, rate dependent properties, stress and strain curves.
2. Normal and Applied Biomechanics of Spine, Pelvic Girdle, Upper extremity and Lower extremity.

UNIT III

1. Biomechanics of posture & its analysis.
2. Biomechanics of respiration, circulation.
3. Biomechanics of hand function and dexterity.

UNIT IV

1. Kinetics and Kinematics of normal and abnormal gait.

UNIT V

1. Tools for biomechanical analysis:
   a. Isokinetics In Rehabilitation: Introduction to Isokinetic Technology: A global exchange and applications
   b. Force Platforms and Other Techniques Of Movement Analysis: Introduction and equipment considerations, Experimental Procedures, Electro-goniometry and accelerometry, Use of inclinometers in sports analysis
   c. Videographic analysis of sports movements: Motion Capture technologies
2. Patient Positioning, Body Mechanics and Transfer Techniques.
3. Ergonomics:
   a. Workplace capacity analysis and role of physiotherapy

b. Industrial setup, job site disability, pre employment screening, worker's functional capacity measurement/assessment, work hardening.
c. Approach to lifting and handling, workspace and environment.

RECOMMENDED TEXTBOOK/ REFERENCE BOOKS:

Textbooks:

1. Joint structure and function- Cynthia Norkins, 4th Edition, Jaypee Publication.
2. Pathomechanics – Steindler

Reference Books:

1. Biomechanical basis of human movement, Joseph Hamill & Kathleen M.Knutzen, 3rd Edition, LWW Publications.
2. Bio-mechanics of Musculoskeletal System by Nigg, 2nd Edition, John Wiley Publication.
3. Kinesiology by K Wells, 6th Edition; Saunders Publication.
4. Clinical Kinesiology – Brunnstorm, 5th Edition, Jaypee Publication.

Note: Latest editions of suggested books are recommended

MPT SEMESTER - II

PERSONALITY DEVELOPMENT & COMMUNICATION-II
(Minimum Hours- 40 hrs)

Course code: MPT249 **L-2, T-0, P-2, C-3**

Course objective:

The objective of the course is to improve conversation & writing skills & preparing the students to face interviews.

Course Content:

UNIT I

Conversation Practice

a) How to initiate a conversation
b) Basics of communication: 7 C's of communication
c) Conversation practice through group discussion on a common topic.

UNIT II

Writing Skills

a) Format & style of application writing, practice of writing applications on common issues.
b) E-mail writing
c) Writing story from the given set of words
d) Translation of short paragraph from Hindi to English & from English to Hindi**.**

UNIT III

a) Watching short English videos with subtitles
b) Voice modulation: 5 P's – Pace, Power, Pronunciation, Pause & Pinch

UNIT IV

Employability Communication & Handling Interviews

a) Writing Emails
b) Job application writing-solicited and unsolicited
c) Resume
d) Joining reports
e) Interview techniques: planning & execution
f) Mock interview sessions

RECOMMENDED STUDY MATERIAL
REFERENCE BOOKS:

1. English Grammar Composition & Usage by J.C. Nesfield, Macmillan Publishers
2. The Business letters by Madan Sood, Goodwill Publishing House, New Delhi
3. Communication Skills by Sanjay Kumar &PushpLata, Oxford University Press
4. Taylor Grant, *English Conversation Practice*, Tata McGraw Hill New Delhi.
5. Mohan Krishna and Banerji Meera, *Developing Communication Skills*, MacMillan India Ltd., Delhi.

Note: Latest editions of suggested books are recommended

MPT SEMESTER - III
SPORT DISORDERS -I
(Minimum Hours Theory: 60)

Course code: MPT318 **L-4, T-0, P-0, C-4**

Course objective:

In this course, the student will learn about causes, signs and symptoms, investigations, physiotherapeutic and surgical management of various traumatic & non traumatic conditions. They also develop clinical reasoning with evidences that integrate the effect of Physiotherapy into those conditions.

Course contents:

UNIT I:

1. Applied anatomy with emphasis on Biomechanics & Kinesiology of Human motion in Sports specific activities.
2. Assessment of the sportsperson
3. Analysis and classification of sports and sports specific injuries and its management.
4. Principles of Injury Prevention
5. Stages of inflammation and repair of various connective tissues.
6. Applied Pharmacology:
    a. Basic pharmacokinetics ,Pharmacodynamics, principles of drug action of analgesics, Anti inflammatory (Selelctive, Non Selelctive), Muscle relaxants, Steroids.
    b. Classification of drugs and methods used for Doping in Sports.

UNIT II:

1. Sports Specific Fractures & dislocations of skull, upper limb, Spine, Lower Limb.
2. Sports Specific Soft tissue injuries and its managment:

a. Classification of soft tissue injuries: Acute & overuse.
b. Identification, Assessment of various soft tissue injuries of upper limb, lower limb, groin, Face and Trunk.
3. Common Hand injuries and Entrapment neuropathies with their managment.
4. Acquired deformities in sports

UNIT III:

1. Neuromuscular disorders: Cerebral Palsy, Leprosy, Myasthenia Gravis, Poliomyelitis.
2. Infective, arthritic, inflammatory and metabolic diseases of joints.
3. Bone tumors.

UNIT IV:

1. Analysis and classification of sports and sports specific injuries and its management.
2. Medico legal issues in sports, Sports Psychology, Sports Nutrition and Sports pharmacology.

UNIT V:

1. Recent Advances in Sport Disorders.

RECOMMENDED TEXTBOOKS/REFRENCE BOOKS:

Textbooks:

1. Textbook of Anatomy by Inderbir Singh; 4th edition; Jaypee Publications.
2. Textbook of Medical Physiology by Guyton & Hall, 11th Edition; Elsevier Publication.
3. Essentials of Medical Pharmacology, 6th Edition, KD Tripathi, Jaypee
4. Publications Text book of Pathology - Harsh Mohan - Jaypee publications.
5. Brukner and Khan: Clinical Sports Medicine, McGraw Hill.
6. Reed: Sports Injuries – Assessment and Rehabilitation, W.B. Saunders.
7. Outline of Fractures—John Crawford Adams.
8. Orthopaedic Physical Assessment by David Magee. Saunders; 5th edition 2007.
9. Clinics in Sports Medicine. Peter Brukner, Karim Khan. McGraw-Hill Medical; 4 edition. 2012
10. Principles and practice of athletic training. William Prentice. Lippincott and Williams.2004

Reference Books:

1. Gray's Anatomy for Students. Richard Drake, A. Wayne Vogl, Adam W. M. Mitchell. Elsevier Health Sciences, 2009
2. Clinical Anatomy for Medical Students by Richard Snell, 6th edition, Lippincott.
3. Physiology of Sport and Exercise. W. Larry Kenney, Jack Wilmore, David Costill, Human Kinetics, 1999
4. Human Physiology, Chatterjee. Vol: 1&2; 10th Edition; Medical & Allied Agency.
5. Principles of Anatomy & Physiology, Tortora, 8th Edition; Harper & Row Publication.
6. Pharmacology & Pharmacotherapeutics, 12th Edition, RS Satoshkar, Populrar Publications
7. Pathology: Implications for Physical Therapists - Goodmann and Boissonnault - W.B. Saunders.
8. Foundations of Sport & Exercise Psychology by Brad Schoenfeld, Human Kinetics, 2006.
9. Apley's textbook of orthopedics and fractures by Apley's 7th edition B/H publications.
10. Orthopaedics: Principles & Their application by Turek's.

Note: Latest editions of suggested books are recommended

MPT SEMESTER - III
SPORT DISORDERS-I (Lab)
(Minimum Hours Practical: 30)

Course code: MPT368 **L-0, T-0, P-2, C-1**

Course objective:

In this subject, the student will learn about the use of various physical agents, therapeutic exercises and advanced manual therapy approaches for the effect of physiotherapy into various traumatic and non-traumatic conditions.

Course Contents:

1. Administration of musculoskeletal assessment tools on patient groups.
2. Demonstration of various clinical (lab and radiographic) tests or surgical procedures performed for musculoskeletal conditions
3. Assessment of Gait, Hand and posture.
4. Manipulation techniques from various schools of thoughts.
5. Post surgical management of various palliative and reconstructive surgeries performed in musculoskeletal conditions.
6. Prescription of appropriate orthotic and prosthetic devices for management of musculoskeletal dysfunctions.

RECOMMENDED STUDY MATERIAL:

TEXTBOOKS:

1. Outline of Fractures—John Crawford Adams.
2. Orthopaedic Physical Assessment by David Magee.
3. Outline of Orthopedics — John Crawford Adams.
4. Brukner and Khan: Clinical Sports Medicine, McGraw Hill.
5. Reed: Sports Injuries – Assessment and Rehabilitation, W.B. Saunders
6. Orthopaedics – John Ebenezer.
7. Clinical Orthopaedic Rehabilitation 2nd ed , Brotzman S B.
8. Physical Agents in Rehabilitation: From Research to Practice by Cameron.
9. Measurement in physical therapy – Churchill, Livingstone, London 1988.
10. Melzack and Wall: Text book of pain.

REFERENCE BOOKS:

1. Apley's textbook of orthopedics and fractures by Apley's 7th edition B/H publications.
2. Orthopaedics: Principles & Their application by Turek's.
3. Apley's textbook of orthopedics and fractures by Apley's 7th edition B/H publications.
4. Physical Therapy of the Shoulder by Donatelli R.
5. Managing low back pain, Kirkaldy- Willis

Note: Latest editions of suggested books are recommended

MPT SEMESTER - III
MUSCULOSKELETAL DISORDERS –I
(Minimum Hours Theory: 60)

Course code: MPT317 **L-4, T-0, P-0, C-4**

Course objective:

In this subject, the student will learn about causes, signs and symptoms, investigations, conservative and surgical management of various traumatic & non traumatic conditions. They also develop clinical reasoning with evidences that integrate the effect of Physiotherapy into those conditions.

Course contents:

UNIT I

1. Applied anatomy with emphasis on Biomechanics & Kinesiology of Human motion and b Work Physiology

UNIT II

1. Clinical assessment and rationale of Laboratory investigations along with differential diagnoses.
2. Clinical Symptomatology, Pathophysiology and Patho-mechanics of musculoskeletal conditions.
3. Detailed neuromusculoskeletal physical assessment with use of various scales to assess pain, disability and activity limitation.
4. Role of radiology in musculoskeletal disorders.

UNIT III

1. Medical, Surgical and Physiotherapy management following fractures, dislocations and their complications, Amputations, cumulative trauma disorders and Burns.
2. Medical, Surgical and Physiotherapy management in degenerative, inflammatory disorders and allied conditions.
3. Medical, Surgical and Physiotherapy in post operative management of metabolic, hormonal, neoplastic and infective conditions of bones and joints.

UNIT IV

1. Peripheral nerve lesions and their Surgical & PT management.
2. Conservative and Surgical management of Pediatric musculoskeletal disorders.
3. Medical, Surgical and Physiotherapy of Regional soft tissue injuries.

UNIT V

1. Orthopaedic implants-designs, materials, indications, post-operative assessment and training.
2. Physiotherapy following arthroplasty, implants and soft tissue repairs.
3. Assessment of locomotor impairments, disabilities and disability evaluation.
4. Kinetic and kinematics analysis for various functional activities and gait.
5. Recent Advances in Musculoskeletal Disorders.

RECOMMENDED STUDY MATERIAL:

TEXTBOOKS:

1. Outline of Fractures—John Crawford Adams.
2. Orthopaedic Physical Assessment by David Magee.
3. Outline of Orthopedics — John Crawford Adams.
4. Orthopaedics – John Ebenezer.
5. Clinical Orthopaedic Rehabilitation 2nd ed , Brotzman S B.
6. Physical Agents in Rehabilitation: From Research to Practice by Cameron.
7. Measurement in physical therapy – Churchill, Livingstone, London 1988.
8. Melzack and Wall: Text book of pain.

REFERENCE BOOKS:

1. Apley's textbook of orthopedics and fractures by Apley's 7th edition B/H publications.
2. Orthopaedics: Principles & Their application by Turek's.
3. Apley's textbook of orthopedics and fractures by Apley's 7th edition B/H publications.
4. Physical Therapy of the Shoulder by Donatelli R.
5. Managing low back pain, Kirkaldy- Willis

Note: Latest editions of suggested books are recommended

MPT SEMESTER - III
MUSCULOSKELETAL DISORDERS-I (Lab)

(Minimum Hours Practical: 30)

Course code: MPT367 **L-0, T-0, P-2, C-1**

Course objective:

The main objective of this subject is to make student practice assessment in Musculoskeletal Physiotherapy. The student should understand the use of various assessment parameters, their application in depth to a specific condition.

Course Contents:

1. Administration of musculoskeletal assessment tools on patient groups.
2. Demonstration of various clinical (lab and radiographic) tests or surgical procedures performed for musculoskeletal conditions
3. Assessment of Gait and posture.
4. Post surgical management of various palliative and reconstructive surgeries performed in musculoskeletal conditions.

RECOMMENDED STUDY MATERIAL:

TEXTBOOKS:

1. Outline of Fractures—John Crawford Adams.
2. Orthopaedic Physical Assessment by David Magee.
3. Outline of Orthopedics — John Crawford Adams.
4. Orthopaedics – John Ebenezer.
5. Clinical Orthopaedic Rehabilitation 2nd ed , Brotzman S B.
6. Physical Agents in Rehabilitation: From Research to Practice by Cameron.
7. Measurement in physical therapy – Churchill, Livingstone, London 1988.
8. Melzack and Wall: Text book of pain.

REFERENCE BOOKS:

1. Apley's textbook of orthopedics and fractures by Apley's 7th edition B/H publications.
2. Orthopaedics: Principles & Their application by Turek's.
3. Apley's textbook of orthopedics and fractures by Apley's 7th edition B/H publications.
4. Physical Therapy of the Shoulder by Donatelli R.
5. Managing low back pain, Kirkaldy- Willis

Note: Latest editions of suggested books are recommended

MPT SEMESTER - III
NEUROLOGICAL DISORDERS -I
(Minimum Hours Theory: 60)

Course code: MPT316 **L-4, T-0, P-0, C-4**

Course objective:

In this course, the student will learn about the basic concepts of neurological assessment, electrodiagnosis and principles of management of various neurological disorders.

Course contents:

UNIT I

1. Review of Neuro-anatomy and physiology.
2. Normal sequential behavioral and Physiological changes throughout the developmental arc.
3. Neurophysiology of balance, coordination and locomotion.

UNIT II

1. Neurological Assessment of :
   a. Higher mental function, Pain, Cranial nerve, Sensory & Motor assessment, Coordination & Balance, Posture, Gait, Bladder & bowel, Functional, Oromotor, Vestibular assessment.
   b. Evaluation of ANS dysfunction.
   c. Neonatal and Pediatric Assessment
2. Radiology in neurological sciences.
3. Outcome measures used in various disorders

UNIT III

Clinical symptomatology, Pathophysiology, Principles of clinical neuro diagnosis, investigation and Medical, Surgical and PT management of the neurological disorders:

1. Stroke
2. Spinal Cord injury
3. Head injury
4. Disorders of PNS
5. Degenerative diseases
6. Infectious Disorders
7. Tumors of CNS & PNS.
8. Vestibular disorders

UNIT IV

Electrodiagnosis:

1. Neurophysiology of Nerve conduction studies and Electromyography.
2. Instrumentation of Electrical stimulator, EMG, SFEMG, NCS (Nerve Conduction Studies).
3. Electrical study of reflexes (H- reflex, Axon reflex, F- response, Blink reflex, Jaw jerk, Tonic Vibration Reflex).

4. Repetitive nerve stimulation.
5. Evoked potentials (SSEP, MEP, BAERA, and VER).
6. Interpretation of neurophysiologic responses in Neuropathy, myopathy and neuromuscular disorders.

UNIT V

1. Recent Advances in Neurological Rehabilitation.

RECOMMENDED TEXTBOOKS/ REFERENCE BOOKS:

Textbooks:

1. Physical rehabilitation by Susan B, O' Sullivan, Thomas J. Schmitz.
2. Electrodiagnosis in disease of nerve and muscles by Kimuraj J, F A Davis,Philadelphia.

Reference Books:

1. Neurological Rehabilitation: Taly, A.B.
2. Stroke Therapy: Fisher, Marc.
3. Proprioceptive Neuromuscular Facilitation Knott M & Voss, Harper & Row.
4. Clinical neurophysiology: U.K.Misra, J.Kalita.
5. Motor control Theory and practice: Shumway-cook & Anne.
6. Neurological Rehabilitation: Umphred, Darcy, A.
7. Bickerstaff's neurological examination in clinical practice.
8. Neurological differential diagnosis – John Patten.

Note: Latest editions of suggested books are recommended

MPT SEMESTER - III
NEUROLOGICAL DISORDERS-I (Lab)

(Minimum Hours Practical: 30)

Course code: MPT366 **L-0, T-0, P-2, C-1**

Course objective:

The main objective of this subject is to make student practice assessment in neurological physiotherapy. The student should understand the use of various assessment parameters, their application in depth to a specific condition.

Course Contents:

1. Administration of neurological assessment tools on patient groups.
2. Demonstration of various clinical (lab, electro-diagnostic and radiographic) tests or surgical procedures performed for Neurological conditions.
3. Post surgical management of various palliative and reconstructive surgeries performed in neurological conditions.

RECOMMENDED STUDY MATERIAL:

Textbooks:

1. Physical rehabilitation by Susan B, O' Sullivan, Thomas J. Schmitz.
2. Electrodiagnosis in disease of nerve and muscles by Kimuraj J, F A Davis,Philadelphia.

Reference Books:

1. Neurological Rehabilitation: Taly, A.B.
2. Stroke Therapy: Fisher, Marc.
3. Proprioceptive Neuromuscular Facilitation Knott M & Voss, Harper & Row.
4. Clinical neurophysiology: U.K.Misra, J.Kalita.
5. Motor control Theory and practice: Shumway-cook & Anne.
6. Neurological Rehabilitation: Umphred, Darcy, A.
7. Bickerstaff's neurological examination in clinical practice.
8. Neurological differential diagnosis – John Patten.

Note: Latest editions of suggested books are recommended

MPT SEMESTER - III
ETHICS AND PEDAGOGY

(Minimum Hours theory: 80 hrs)

Course code: MPT314 **L-3, T-2, P-0, C-4**

Course objective:

In this course, the student learns about moral values, ethical principles, educational objectives, concepts of teaching- learning, evaluation methods, principles of curriculum planning, control of quality in relation to Physiotherapy Care and Service.

Course contents:

UNIT I: ETHICS

1. **PT values and ethics.**
    a. Rules of Professional Conduct.
    b. Concept of Morality and Ethics.
    c. Communication skills, Client Interest and Satisfaction.
    d. Inter Disciplinary Relation, Co-Partnership, Mutual Respect, Confidence and Communication, responsibilities of the Physiotherapists, Status of Physiotherapist in Health Care.
    e. Privatization of education.
    f. Ethics in practice for patient care
2. **Ethics of various organizations**
    a. Need of Council Act for regulation of Professional Practice, Self-Regulatory role of Professional Association.
    b. World Confederation of Physical therapists (WCPT).
    c. Regulation of different governing bodies.

UNIT II

1. **PT Laws and Legal concepts.**

    Medico legal aspects of physical therapy, liability, informed consent negligence, malpractice, licensure, consumer protection act. Law of disability & discrimination, Confidentially of the Patient's status.

UNIT III: PEDAGOGY:

1. **Education:**

    Meaning and scope of Educational Psychology, Meaning and Relationship between teaching and learning, Learning Theories, Dynamics of behavior, Individual Meaning and concept.
2. **Curriculum**
    a. Basis of curriculum formulation, Framing objectives for curriculum, Process of curriculum development and factors involved, Evaluation of curriculum differences.
    b. Curriculum planning – Integrated teaching, Problem based learning, Evidence based medicine.
    c. Skill development- Clinical skills, Communication skills, Counseling skills.

3. **Principles and Methods of Teaching**
    a. Bloom's taxonomy of instructional objectives.
    b. Writing instructional objectives in behavioral terms.
    c. Unit planning, Lesson planning.
    d. Lecture, Demonstration Discussion, Seminar, Assignment.
    e. Types of teaching aids.
    f. Principles of selection, preparation and use of audio-visual aides.
4. **Measurement and Evaluation**
    a. Nature of educational measurement: meaning, process, types of tests.
    b. Aptitude and personality Tests.
    c. Continuous and comprehensive evaluation.

UNIT IV

1. **Guidance and counseling and Awareness Programme**
   Meaning, concepts & principles of guidance and counseling of health & diseases.

RECOMMENDED TEXTBOOKS/REFERENCE BOOKS:

Textbooks:

1. Developing a Pedagogy of Teacher education: Understanding teaching and learning about teaching.
2. Hospital administration and human resource management by R.C.Goyal, 4th edition.
3. Pedagogy in Physiotherapy education by C.S Ram, AITBS, 1st Edition 2013.

Reference Books:

1. Physical Therapy Ethics by Donald L.Gabard, Mike W.Martin, F.A. Davis, 2003.
2. Physical Therapy Administration & Management by Hick Robert J.

Note: Latest editions of suggested books are recommended

MPT SEMESTER - III
CARDIORESPIRATORY DISORDERS-I
(Minimum Hours Theory: 60)

Course code: MPT 315 **L-4, T-0, P-0, C-4**

Course objective:

The main objective of this subject is to make the student familiarize with the assessment in cardiopulmonary Physiotherapy. The student should understand the use of various assessment parameters in depth to a specific condition and will be able to plan appropriate treatment regime based on the knowledge.

Course contents:

UNIT I: Overview of Anatomy of Cardiopulmonary System:

1. Development of cardio pulmonary system.
2. Anatomy of upper and lower respiratory tract.
3. Anatomy of bony thorax & chest wall, Heart, Lungs, Pleura, Pericardium, Blood vessels.

UNIT I1`: Overview of Physiology Of Cardiopulmonary System:

1. Cardiac cycle.
2. Cardiac reflexes.
3. Biomechanics of respiration.
4. Regulation of respiration, blood pressure, body temperature etc.
5. Mechanics of breathing – work of breathing, airway resistance, lung compliance.
6. Respiratory muscle – efficiency, endurance, training, fatigue, weakness.
7. Ventilation & perfusion.
8. Cough reflex, stretch reflex.

UNIT III:

1. Assessment Of Cardiopulmonary System:

    a. History & Subjective assessment.
    b. Inspection of chest wall.
    c. Palpation of chest wall: Disphramatic excursion, work of accessory muscles, Oedema, pain, chest expansion and tracheal deviation.
    d. Auscultation of chest wall: breathe sounds, heart sounds (normal and abnormal), landmarks, its interpretation
    e. Evaluation of peripheral vascular disease
    f. Pre operative Evaluation of cardio pulmonary Diseases and surgeries.

2**.** Laboratory Investigations:

a. Principles, analysis and guidelines for interpretation of ABG, PFT.
b. Principles, analysis and guidelines for interpretation of Treadmill test, Exercise Tolerance test and VO_2 max
c. ECG, ECHO, angiography, Doppler study, chest radiography, Bacteriological and cytological tests.
d. MUGA test.
e. Tests for cardio respiratory endurance testing: Maximal; intermediate and sub maximal.

3**.** Evaluation of Ventilator Dependent Patient:

a. Assessment of ventilators.
b. Respiratory rate, Respiratory pattern, Pulse rate, Temperature, Blood Pressure.
c. Fluid and electrolyte balance.
d. Chest tube drainage and fluid collection system.
e. Arterial blood gas analysis.
f. ECG monitoring – Halter monitoring.
g. Electroencephalogram.
h. Intra-arterial lines, Pulmonary artery balloon flotation catheter, Intravenous lines, Central venous pressure, Intra aortic balloon counter pulsations, Intra cranial Pressure

UNIT IV: Principles of chest physiotherapy techniques**:**

1. Lung hygiene, Postural Drainage, ACBT, Autogenic drainage, PNF techniques, Forced expiratory techniques, chest mobility exercise, biofeedback, aerosol therapy, ACAPALA.
2. Incentive spirometry, humidifiers, nebulizers, intermittent positive pressure breathing, PEEP, BiPAP, CPAP, AMBU bag etc.
3. Cough assistive devices: Flutter Device.

UNIT V:

1. Clinical conditions: Definitions, path physiology, Clinical features, investigations, medical, surgical and PT management of –

a. Pulmonary diseases in premature babies, neonatal distress, birth asphyxia, broncho pulmonary dysphasia, Nickity Wilson syndrome, Meconium aspiration.
b. COPD, Asthma, cystic fibrosis, Immunological deficits, bronchiectasis, lung abscess, pneumonia, interstitial lung diseases, lung cancer, pulmonary tuberculosis, Occupational lung disorders, fracture ribs, pneumothorax, haemothorax, empyema, pleural effusion, pulmonary edema ,pulmonary embolism etc.
c. Congenital heart diseases – persistant ductus arteriosus, co-arctation of aorta, atrial septal defect, ventricular septal defect, transposition of great vessels, tetralogy of fallot.
d. Coronary artery diseases and its manifestations, CABG, Valvular diseases, Rheumatic heart disease, Diseases of myocardium.
e. Peripheral vascular disease.
f. Burns, cardiopulmonary complications in burns.

2. Indications and various types abdominal surgeries.
   Outline the extent, indications, management and complications of – Anterolateral Thoracotomy, Postero lateral Thoracotomy, Median Sternotomy, CABG, PTCA, Angioplasty etc.

3. Recent advances in Cardio Respiratory Disorders.

RECOMMENDED STUDY MATERIAL:

TEXTBOOKS:

1. Cardiovascular and Pulmonary Physical Therapy By Donna frownfelter & Elizabeth dean.
2. Diagnosis and Management of acute respiratory failure By Farokh erach Udawadia.
3. Physiotherapy in Respiratory care By Alexandra Hough.
4. Physiotherapy for Respiratory and cardiac problems – adults and pediatrics By Jenifer Pryor & S.Ammani Prasad.
5. Cardio pulmonary physical therapy by Donna frownfelter.
6. Principles of cardio pulmonary physical therapy by Asbury & Petty.
7. Cardio pulmonary physical therapy by Helen Hillegas, (Saunders).
8. PT for RT & cardiac problems by Weber.
9. Physiotherapy in respiratory care by Hough a Jaypee Publishers, Baltimore
10. Cardiopulmonary symptoms in physiotherapy by Cohen M, Churchill, Livingstone, London
11. Physical rehabilitation: assessment and treatment by O'Sullivan, F.A Davis, Philadelphia
12. Clinical application of ventilatory support by Kinky Churchill, Livingstone, New York

REFERENCE BOOKS:

1. Cardiopulmonary symptoms in physiotherapy practice – Cohen M., ChurchillLivingstone, London 1988.
2. Pulmonary rehabilitation: guidelines to success by Bodkins, Butterworth, Boston.
3. Cardiac rehabilitation by Amundsen lord, Churchill, Livingstone, London.
4. Physical therapy of the cancer patient by McGaryex Charles, Churchill, Livingstone, New York.
5. Multidisciplinary approach to breathing disorder by Leon.
6. Clinical Exercise testing by Jones.
7. Pulmonary rehabilitation. The Obstructive and Paralytic Conditions by John.
8. Coronary artery disease essentials of prevention and Rehabilitation Program by Peter.
9. Pulmonary Rehabilitation by John Hodgkin (Elsevier).

Note: Latest editions of suggested books are recommended

MPT SEMESTER - III
CARDIORESPIRATORY DISORDERS-I (Lab)

(Minimum Hours Practical: 30)

Course code: MPT365 **L-0, T-0, P-2, C-1**

Course objective:

The main objective of this subject is to make student practice assessment in cardiopulmonary Physiotherapy. The student should understand the use of various assessment parameter application in depth to a specific condition and will be able to plan appropriate treatment regime based on the knowledge.

Course Contents:

1. Administration of cardiopulmonary assessment tools on patient groups.
2. Demonstration of various clinical (lab and radiographic) tests performed for cardiovascular and pulmonary functioning with their interpretation.
3. Assessment of ventilated patient and weaning.
4. ICU monitoring of patient's parameters.

RECOMMENDED STUDY MATERIAL:

TEXTBOOKS:

1. Cardiovascular and Pulmonary Physical Therapy By Donna frownfelter & Elizabeth dean.
2. Diagnosis and Management of acute respiratory failure By Farokh erach Udawadia.
3. Physiotherapy in Respiratory care By Alexandra Hough.
4. Cardio pulmonary physical therapy by Donna frownfelter.
5. Principles of cardio pulmonary physical therapy by Asbury & Petty.
6. Cardio pulmonary physical therapy by Helen Hillegas, (Saunders).
7. PT for RT & cardiac problems by Weber.
8. Physiotherapy in respiratory care by Hough a Jaypee Publishers, Baltimore
9. Cardiopulmonary symptoms in physiotherapy by Cohen M, Churchill, Livingstone, London
10. Physical rehabilitation: assessment and treatment by O'Sullivan, F.A Davis, Philadelphia
11. Clinical application of ventilatory support by Kinky Churchill, Livingstone, New York

REFERENCE BOOKS:

1. Cardiopulmonary symptoms in physiotherapy practice – Cohen M., ChurchillLivingstone, London 1988.
2. Pulmonary rehabilitation: guidelines to success by Bodkins, Butterworth, Boston.
3. Cardiac rehabilitation by Amundsen lord, Churchill, Livingstone, London.
4. Physical therapy of the cancer patient by McGaryex Charles, Churchill, Livingstone, New York.
5. Multidisciplinary approach to breathing disorder by Leon.
6. Clinical Exercise testing by Jones.
7. Pulmonary rehabilitation. The Obstructive and Paralytic Conditions by John.
8. Coronary artery disease essentials of prevention and Rehabilitation Program by Peter.
9. Pulmonary Rehabilitation by John Hodgkin (Elsevier).

Note: Latest editions of suggested books are recommended.

MPT SEMESTER - IV
ADMINISTRATION & MANAGEMENT
(Minimum Hours Theory: 40 hrs)

Course code: MPT410 **L-2, T-0, P-0, C-2**

Course objective:

In this course, the student learns basic knowledge and skills essential for effective functioning, and to be conversant with planning, organization, work scheduling, cost, control of quality in relation to Physiotherapy Care and Service.

Course contents:

UNIT I

1. **Introduction**
    a. Management process – planning, organization, direction, controlling .Decision-making.
    b. Quantitative methods of management**:** relevance of statistical and/ or techniques in management.

UNIT II

1. Personnel Management
    a. Staffing Recruitment selection, Performance analysis and appraisal, Collective bargaining.
    b. Job satisfaction Discipline.

2. Marketing
    a. Market segmentation, Channels of distribution.
    b. Promotion, Consumer behavior, marketing research production, planning.
    c. Pricing licenser.

3. Total Quality Management
    a. Basis of quality management, quality assurance program in hospitals.
    b. Medical audit and international quality system.

UNIT III

1. Hospital Administration
    a. Introduction: Branches of administration, Nature and scope of administration.
    b. Principles of hospital administration and its applications to physiotherapy. Planning
    c. and organization: Planning cycle, Principles of organizational charts, Resource and quality management, Planning change –innovation.
    d. Financial issues including budget and income generation.
    e. Hospital administration: Organization, Staffing, Information, Communication, Coordination, Cost of services, Monitoring and evaluation.
    f. Organization of physiotherapy department: Planning, Space, Manpower, Other basic resources.
    g. Material management: Pharmacy, Hospital waste disposal.
    h. Quality assurance: Hospital acquired infection, Quality assurance through record review and medical audit.
    i. Public relations in hospital and human resource management.

UNIT IV

1. **Physiotherapy Profession and Staff Roles**
    a. Physiotherapy: Definition and Development.
    b. Physiotherapy practice in India and their demands. Physiotherapy services in rural and urban areas.

UNIT V

1. **Documentation, Assessment & Interpretation:**
    a. History taking, assessment, tests, Patient communication, documentation of findings, organization and planning/execution for intervention.
    b. Documentation of rehabilitation assessment and management using International Classification of Functioning Disability and Health (ICF).
    c. Standardized tests and scales used in various types of cases for assessment and interpretation in Physiotherapy practice.

RECOMMENDED TEXTBOOKS/REFERENCE BOOKS:

Textbooks:

1. Hospital administration and human resource management by R.C.Goyal, 4the dition.

Reference Books:

1. Physical Therapy Ethics by Donald L.Gabard, Mike W.Martin, F.A. Davis, 2003.
2. Physical Therapy Administration & Management by Hick Robert J.

Note: Latest editions of suggested books are recommended

MPT SEMESTER - IV
SPORT DISORDERS -II
(Minimum Hours Theory: 60)

Course code: MPT418 **L-4, T-0, P-0, C-4**

Course objective:

In this course, the student will learn about advanced techniques of manual therapy, Protective and supportive techniques in sports and designing of training plan for athletes to function as a consultant in the team of sports science and medicine for athletic training and prevention.

Course contents:

UNIT I:

1. Overview of Principles of biomechanics and biomechanical analysis in sports
2. Sports specific biomechanical analysis of:
   Biomechanics, its uses and application in rowing, throwing, swimming, jumping, running, Football, base ball pitching, cricket, Racquet sports, track and field, volleyball, Rugby, golf, Hockey, aquatic sports, cycling and gymnastics.

UNIT II:

1. Sports Psychology
   a. Introduction to Sports Psychology**:**
      History, definition and scope of sports psychology**,** methods of studying behavior**,** personality and its relevance in sports
   b. Psychology Of Sports Injuries**:**
      Psychological Aspects Of Sports Injuries, Goal Setting- Principles and importance in sports, Motivation, group behaviors and leadership, precompetitive anxiety and performance
   c. Psychological Preparation Of Elite Athletes:
      Concept of psychological preparation, stress, Arousal and Anxiety: effects on sports and intervention strategies-Concentration training, Biofeedback training, Cognitive stress and somatic stress management techniques, Relaxation training

UNIT III:

1. Pre participation and emergency on field evaluation
2. Off field assessment of an athlete
3. Sports health and fitness testing.
4. Disability screening and evaluation
5. Miscellaneous:

a. Assessment of trunk muscles dysfunction.
b. Evaluation of 'Swiss ball' exercise prescription for orthopaedic problems.
c. Assessments of myofascial trigger point-diagnosis, pressure algometry.
d. Functional Assessment in sports.

UNIT IV:

1. Sport rehabilitation for special groups: Females, Paediatric and geriatric athlete .
2. Principles of training and rehabilitation.
3. Principles of injury prevention.
4. Manual therapy Approaches and interventions:

a. Introduction to manual therapy techniques: Butler**,** Positional release**,** Myofasial release **,** Muscle energy Techniques
b. Introduction to joint techniques: Mckenzie **,** Mulligan **,** Maitland**,** Kaltenborn
c. Clinical reasoning for application of manual therapy procedures and techniques

UNIT V:

1. Medicolegal issues in sports.
2. Sports nutrition
3. Sports for Disabled.
4. Recent Advances in sport Disorders.

RECOMMENDED STUDY MATERIAL:

Textbooks:

1. Athletic Injuries & Rehabilitation – Zachazewski James E., Magee David J.
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. Saunders.
5. A.G. Sinha, Principle and Practices of Therapeutic Massage. Jaypee Brothers, New
6. Mc Ardle, Katch, Katch: Exercise Physiology Edition IV.
7. Therapeutic Exercise by Kisner & Colby, 4th Edition; Jaypee Publication
8. Claytons Electrotherapy 10th Ed. – Sarah & Bazin – W.B. Saunders
9. Joint structure and function- Cynthia Norkins, 4th Edition, Jaypee Publication
10. Greenman's Principles Of Manual Medicine, Lisa A. DeStefano, D.O.
11. Introduction to Sports Biomechanics: Analysing Human Movement Patterns. Roger Bartlett. Routledge; 3rd edition. 2014
12. The Biomechanics of Sports Techniques. James Hay. Benjamin Cummings; 4th edition 1993
13. Fundamentals of Biomechanics. Duane Knudson. Springer; 2nd edition 2007.
14. Sport and Exercise Biomechanics (BIOS Instant Notes). P.Grimshaw and A.Burden. Taylor & Francis; 1 edition (August 11, 2006).
15. Clinics in Sports Medicine. Peter Brukner, Karim Khan. McGraw-Hill Medical; 4 edition. 2012
16. Principles and practice of athletic training. William Prentice. Lippincott and Williams.2004.
17. Bompa and Haff. Periodization-5th Edition- Theory and Methodology of training.

Reference Books:

1. Kuprian: Physical Therapy for Sports, W.B. Saunders.
2. Bates: Aquatic Exercise Therapy, W.B. Saunders.
3. Maitland's Vertebral Manipulation. Geoff Maitland, Elly Hengeveld and Kevin Banks Butterworth-Heinemann; 7th edition.2005
4. Maitland's Peripheral Manipulation. Elly Hengeveld and Kevin Banks.Butterworth-Heinemann; 4th edition 2005.

5. Sports Biomechanics: The Basics: Optimizing Human Performance. Anthony
6. Blazevisch. A&C Black, 2nd Edition edition 2010.
7. Sports Biomechanics: Reducing Injury Risk and Improving Sports Performance.
8. Routledge; 2nd edition. 2011
9. An Introduction to Biomechanics of Sport and Exercise. James Watkins.
10. Churchill Livingstone; 1 edition (August 10, 2007)
11. Basic Biomechanics of the Musculoskeletal System. Margareta Nordin and
12. Victor H.Frankel. LWW; Fourth North American Edition edition. 2012.
13. Apley's textbook of orthopedics and fractures by Apley's 7th edition B/H publications.
14. Orthopaedics: Principles & Their application by Turek's.
15. Essentials of Orthopaedics. John Ebenezer. Jaypee Publishers.2006.
16. Orthopaedic Physical Assessment by David Magee.
17. Pathology and Intervention in Musculoskeletal Rehabilitation. Saunders; Har/Cdr edition, 2008.
18. ACSM's Sports Medicine: A Comprehensive Review.Francis.G.O'Conner. Lippincott Williams & Wilkins; 1st edition, 2012.
19. Athletic Injuries & Rehabilitation – Zachazewski James E., Magee David J.
20. Baechle and Earle. Essentials of Strength training and conditioning, 3rd Ed. Human Kinetics, 2012.
21. NSCA'S Guide to Program Design (Science of Strength and Conditioning). Human Kinetics; 1 edition, 2012.
22. Greenman's Principles Of Manual Medicine, Lisa A. DeStefano, D.O.
23. Maitland's Vertebral Manipulation. Geoff Maitland, Elly Hengeveld and Kevin Banks Butterworth-Heinemann; 7th edition.2005
24. Maitland's Peripheral Manipulation. Elly Hengeveld and Kevin Banks. Butterworth-Heinemann; 4th edition 2005.
25. Manual Therapy: NAGS, SNAGS, MWMS, Brian R. Mulligan Orthopedic Physical Therapy Products; 6th edition 2010.
26. Mobilization of Nervous System-David Butler. Churchill Livingstone; 1st edition 1991.
27. Muscle energy technique. Leon Chatow. Churchill Livingstone; 3rd edition 2006.

Note: Latest editions of suggested books are recommended

MPT SEMESTER - IV
SPORT DISORDERS-II (Lab)

(Minimum Hours Practical: 30)

Course code: MPT468 **L-0, T-0, P-2, C-1**

Course objective:

In this subject, the student will learn about the use of various physical agents, therapeutic exercises and advanced manual therapy approaches and sports specific strategies aimed to improve effect of athletic performance in various traumatic and non-traumatic conditions.

Course Contents:

1. Administration of Performance enhancing strategies on athletic groups.
2. Demonstration of various clinical (lab and radiographic) tests or surgical procedures performed for musculoskeletal conditions
3. Entry level Assessment/ Pre participation assessment of athletes.
4. Pre exercise evaluation of athlete.
5. Fitness testing and fitness clearance.
6. Manipulation techniques from various schools of thoughts.
7. Practice of various advanced therapeutic exercises to promote fitness components in an athlete.

RECOMMENDED STUDY MATERIAL:

Textbooks:

1. Athletic Injuries & Rehabilitation – Zachazewski James E., Magee David J.
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. Saunders.
5. A.G. Sinha, Principle and Practices of Therapeutic Massage. Jaypee Brothers, New
6. Therapeutic Exercise by Kisner & Colby, 4th Edition; Jaypee Publication
7. Claytons Electrotherapy 10th Ed. – Sarah & Bazin – W.B. Saunders
8. Joint structure and function- Cynthia Norkins, 4th Edition, Jaypee Publication
9. Greenman's Principles Of Manual Medicine, Lisa A. DeStefano, D.O.
10. Introduction to Sports Biomechanics: Analysing Human Movement Patterns. Roger Bartlett. Routledge; 3rd edition. 2014
11. The Biomechanics of Sports Techniques. James Hay. Benjamin Cummings; 4th edition 1993
12. Clinics in Sports Medicine. Peter Brukner, Karim Khan. McGraw-Hill Medical; 4 edition. 2012
13. Principles and practice of athletic training. William Prentice. Lippincott and Williams.2004.
14. Bompa and Haff. Periodization-5th Edition- Theory and Methodology of training.

Reference Books:

1. Kuprian: Physical Therapy for Sports, W.B. Saunders.
2. Bates: Aquatic Exercise Therapy, W.B. Saunders.
3. Maitland's Vertebral Manipulation. Geoff Maitland, Elly Hengeveld and Kevin Banks Butterworth-Heinemann; 7th edition.2005
4. Maitland's Peripheral Manipulation. Elly Hengeveld and Kevin Banks.Butterworth-Heinemann; 4th edition 2005.
5. Sports Biomechanics: The Basics: Optimizing Human Performance. Anthony Blazevisch. A&C Black, 2nd Edition edition 2010.
6. Sports Biomechanics: Reducing Injury Risk and Improving Sports Performance.
7. Routledge; 2nd edition. 2011
8. An Introduction to Biomechanics of Sport and Exercise. James Watkins. Churchill Livingstone; 1 edition (August 10, 2007)
9. Basic Biomechanics of the Musculoskeletal System. Margareta Nordin and Victor H.Frankel. LWW; Fourth North American Edition edition. 2012.
10. Apley's textbook of orthopedics and fractures by Apley's 7th edition B/H publications.
11. Essentials of Orthopaedics. John Ebenezer. Jaypee Publishers.2006.
12. Orthopaedic Physical Assessment by David Magee.
13. ACSM's Sports Medicine: A Comprehensive Review.Francis.G.O'Conner. Lippincott Williams & Wilkins; 1st edition, 2012.
14. Athletic Injuries & Rehabilitation – Zachazewski James E., Magee David J.
15. Baechle and Earle. Essentials of Strength training and conditioning, 3rd Ed. Human Kinetics, 2012.
16. NSCA'S Guide to Program Design (Science of Strength and Conditioning). Human Kinetics; 1 edition, 2012.
17. Greenman's Principles Of Manual Medicine, Lisa A. DeStefano, D.O.
18. Maitland's Vertebral Manipulation. Geoff Maitland, Elly Hengeveld and Kevin Banks Butterworth-Heinemann; 7th edition.2005
19. Maitland's Peripheral Manipulation. Elly Hengeveld and Kevin Banks. Butterworth-Heinemann; 4th edition 2005.
20. Manual Therapy: NAGS, SNAGS, MWMS, Brian R. Mulligan Orthopedic Physical Therapy Products; 6th edition 2010.
21. Mobilization of Nervous System-David Butler. Churchill Livingstone; 1st edition 1991. Muscle energy technique. Leon Chatow. Churchill Livingstone; 3rd edition 2006.

Note: Latest editions of suggested books are recommended

MPT SEMESTER - IV
NEUROLOGICAL DISORDERS -II
(Minimum Hours Theory: 60)

Course code: MPT416 **L-4, T-0, P-0, C-4**

Course objective:

In this course, the student will learn about the basic principles of assessment, management and rehabilitation in community of various neurological disorders alongwith the recent advances in their management. They will also learn about the various treatment approaches available.

Course contents:

UNIT I

1. Theories of motor control, learning and its application in physiotherapy. Principles of brain plasticity.
2. Pathophysiology and Management of tonal abnormalities (Spasticity, Rigidity, Hypotonia, and Dystonia)

UNIT II

1. Clinical symptomatology, Pathophysiology, Principles of clinical neuro diagnosis, investigation and Medical, Surgical and PT management of the neurological disorders::

a) Pediatric & Neonatal disorders
b) Cognitive & Perceptual disorders
c) Genetic disorders
d) Toxic, metabolic and nutritional disorders
e) Motor neuron Diseases.
f) Demylinating neuropathies.
g) Neuromuscular Disorders

UNIT III

1. Vestibular disorders management
2. Movement Disorders and management
3. Managment of A.N.S dysfunction with reference to psycho-physiological testing & Biofeedback training

UNIT IV

1. Assistive devices and Aids & appliances in neurological disorders. Prescriptions, testing and training.
2. Basic knowledge of drugs used for neurological conditions.

UNIT V

1. Community based rehabilitation for neurological dysfunction. Disability evaluation and management.
2. Geriatric rehabilitation.
3. Hydrotherapy.
4. Recent Advances in Neurological Rehabilitation.

RECOMMENDED STUDY MATERIAL:

TEXTBOOKS:

1. Carr & Shepherd – Neurological rehabilitation: optimizing motor performance
2. Motor control Theory and practice: Anne Shumway-cook
3. Neurological Rehabiliation: Umphred, Darcy, A.
4. Motor learning and performance: a situation based approach: Richard R.Scmidtz
5. Physical rehabilitation by Susan B, O' Sullivan, Thomas J. Schmitz.
6. Electrodiagnosis in disease of nerve and muscles by Kimuraj J, F A Davis, Philadelphia.
7. Neurological differential diagnosis – John Patten.

REFERENCE BOOKS:

1. Functional neuro rehabilitation: Berner, Julie.
2. Stroke Therapy: Fisher, Marc.
3. Patricia Davies – Right in the middle (trunk activity in hemi).
4. Patricia Davies – Steps to follow (comprehensive treatment for hemi).
5. Sydney Sunderland – Nerves and nerve injuries.
6. Neurological Rehabilitation: Taly, A.B.
7. Proprioceptive Neuromuscular Facilitation Knott M & Voss, Harper & Row.
8. Neuro rehabilitation by Farber, W.B. Saunders.
9. Clinical neurophysiology: U.K.Misra, J.Kalita.
10. Bickerstaff's neurological examination in clinical practice.

Note: Latest editions of suggested books are recommended

MPT SEMESTER - IV
NEUROLOGICAL DISORDERS-II (Lab)
(Minimum Hours Practical: 30)

Course code: MPT466 **L-0, T-0, P-2, C-1**

Course objective:

In this subject, the student will learn about the use of various physical agents, therapeutic exercises and advanced Neurological approaches for the effect of physiotherapy into various traumatic and non-traumatic neurological conditions.

Course Contents:

1. Administration of neurological assessment tools on patient groups.
2. Demonstration of various clinical (lab and radiographic) tests or surgical procedures performed for neurological conditions.
3. Assessment of Gait, Hand and posture.
4. Neurological Approaches from various schools of thoughts.
5. Pediatric assessment.
6. Prescription of appropriate orthotic and prosthetic devices for management of neurological dysfunctions.

RECOMMENDED STUDY MATERIAL:

TEXTBOOKS:

1. Carr & Shepherd – Neurological rehabilitation: optimizing motor performance
2. Motor control Theory and practice: Anne Shumway-cook
3. Neurological Rehabiliation: Umphred, Darcy, A.
4. Motor learning and performance: a situation based approach: Richard R.Scmidtz
5. Physical rehabilitation by Susan B, O' Sullivan, Thomas J. Schmitz.
6. Electrodiagnosis in disease of nerve and muscles by Kimuraj J, F A Davis, Philadelphia.
7. Neurological differential diagnosis – John Patten.

REFERENCE BOOKS:

1. Functional neuro rehabilitation: Berner, Julie.
2. Stroke Therapy: Fisher, Marc.
3. Patricia Davies – Right in the middle (trunk activity in hemi).
4. Patricia Davies – Steps to follow (comprehensive treatment for hemi).
5. Sydney Sunderland – Nerves and nerve injuries.
6. Neurological Rehabilitation: Taly, A.B.
7. Proprioceptive Neuromuscular Facilitation Knott M & Voss, Harper & Row.
8. Neuro rehabilitation by Farber, W.B. Saunders.
9. Clinical neurophysiology: U.K.Misra, J.Kalita.
10. Bickerstaff's neurological examination

Note: Latest editions of suggested books are recommended

MPT SEMESTER -IV
MUSCULOSKELETAL DISORDERS (PART –II)
(Minimum Hours Theory: 60)

Course code: MPT417 **L-4, T-0, P-0, C-4**

Course objective:

In this subject, the student will learn about the use of various physical agents, therapeutic exercises and advanced manual therapy approaches for the effect of physiotherapy management into various traumatic and non-traumatic conditions.

Course contents:

UNIT I

1. Functional assessment (Hand function, Gait, Posture A.D.L; occupational work).

UNIT II

1. Hand Rehabilitation.

UNIT III

1. Physiotherapy management of locomotor disorder, principles of medical and surgical aspects, Neurological complications of locomotor disorders.
2. External aids, appliances, adaptive self-help devices; prescription, biomechanical compatibility, check-out and training.

UNIT IV

1. Manual therapy: soft tissue manipulations and mobilization, neural mobilization,
2. Acupressure or accupuncture.(Cyriax, Maitland, Butler, McKenzie, Kaltenborn, Mulligan, Myofascial Release technique, Positional release technique and Muscle Energy technique).
3. Advanced therapeutic exercises: Isokinetic training, Plyometrics, Aquatic Therapy, Stress testing, Core training.
4. Pilates-school of thought, Chiropractic school of thought, Osteopathic school of thought
5. Joint manipulation – peripheral joints and vertebral joints.
6. Neuromuscular Taping Techniques

UNIT V

1. Community based rehabilitation in musculoskeletal disorders:
   IBR vs CBR, role of members of CBR, Environmental modification, vocational rehab.
2. Recent Advances in Musculoskeletal Disorders.

RECOMMENDED TEXTBOOKS AND REFRENCE BOOKS:

Textbooks:

1. Clinical Orthopaedic Rehabilitation 2nd ed , Brotzman S B.
2. Physical Agents In Rehabilitation : From Research To Practice by Cameron

Reference Books:

1. Apley's textbook of orthopedics and fractures by Apley's 7th edition B/H publications.
2. Physical Therapy of the Shoulder by Donatelli R.
3. Managing low back pain, Kirkaldy- Willis.

Note: Latest editions of suggested books are recommended

MPT SEMESTER - IV
MUSCULOSKELETAL DISORDERS-II (Lab)

(Minimum Hours Practical: 30)

Course code: MPT467 **L-0, T-0, P-2, C-1**

Course objective:

In this subject, the student will learn about the use of various physical agents, therapeutic exercises and advanced manual therapy approaches for the effect of physiotherapy into various traumatic and non-traumatic conditions.

Course Contents:

1. Administration of musculoskeletal assessment tools on patient groups.
2. Demonstration of various clinical (lab and radiographic) tests or surgical procedures performed for musculoskeletal conditions
3. Assessment of Gait, Hand and posture.
4. Manipulation techniques from various schools of thoughts.
5. Post surgical management of various palliative and reconstructive surgeries performed in musculoskeletal conditions.
6. Prescription of appropriate orthotic and prosthetic devices for management of musculoskeletal dysfunctions.

RECOMMENDED STUDY MATERIAL:

TEXTBOOKS:

1. Outline of Fractures—John Crawford Adams.
2. Orthopaedic Physical Assessment by David Magee.
3. Outline of Orthopedics — John Crawford Adams.
4. Orthopaedics – John Ebenezer.
5. Clinical Orthopaedic Rehabilitation 2nd ed , Brotzman S B.
6. Physical Agents in Rehabilitation: From Research to Practice by Cameron.
7. Measurement in physical therapy – Churchill, Livingstone, London 1988.
8. Melzack and Wall: Text book of pain.

REFERENCE BOOKS:

1. Apley's textbook of orthopedics and fractures by Apley's 7th edition B/H publications.
2. Orthopaedics: Principles & Their application by Turek's.
3. Apley's textbook of orthopedics and fractures by Apley's 7th edition B/H publications.
4. Physical Therapy of the Shoulder by Donatelli R.
5. Managing low back pain, Kirkaldy- Willis

Note: Latest editions of suggested books are recommended

MPT SEMESTER - IV
CARDIORESPIRATORY DISORDERS-II
(Minimum Hours Theory: 60)

Course code: MPT415 **L-4, T-0, P-0, C-4**

Course objective:

In this subject, the student will learn in detail about treatment techniques in cardio pulmonary physiotherapy. Student should also update himself/herself with latest advancement in the therapeutic approaches.

Course contents:

UNIT I

1. Cardiac rehabilitation:
    a. Conservative and post-operative management.
    b. Disease specific approaches
2. Pulmonary Rehabilitation:
    a. Conservative and post-operative management.
    b. Disease specific approaches.

UNIT II

1. Intensive care therapy and its principles:

a. Concept and set up, equipment for advanced methods of resuscitation, monitoring and patient management with: artificial airways, ventilators, pulse oxymeter, defibrillator
b. Pharmacological agents used in ICUs - Bronchodilators, cardiac inotropes, vasodilators, antihypertensive
c. Knowledge and Principles of the following equipments & technique of application :-
d. Endotracheal tubes, Tracheostomy tubes, Humidifiers, Ryle's tube, ICD tube, Suction pumps and suctioning techniques, Oxygen therapy, positioning and early ambulation in ICU
e. Physiotherapy management in IPCU, NICU, Emergency trauma care, ICU, CCU, MICU

2. Cardiopulmonary emergencies and its management:

a. Medication, critical care, indications of surgical interventions, stabilization of vital functions
b. Cardio-pulmonary resuscitation - Artificial respiration, BLS, ACLS, AHA guidelines
c. Cardiac massage, Defibrillators, etc.

3. Inspiratory Muscle training.

UNIT III

1. Role of drugs used in cardio respiratory conditions and its impact on exercise:
2. Emergency Drugs, Anti Hypertensives, Bronchodialators, Beta 2 agonists, Corticosteroids etc.
3. Physiotherapy in special age groups and populations:

   a. Pediatric cardiopulmonary physiotherapy.
   b. Common cardio-pulmonary conditions in geriatrics and it`s physiotherapy management
   c. Ergonomics in Cardiovascular & Pulmonary Conditions – at industry, sports ,occupation, home etc
   d. CBR in cardio-vascular and pulmonary conditions
4. Approach in specific conditions:

   a. Effects of aerobic, anaerobic exercises on cardiac functions.
   b. Risk factors in cardio pulmonary bypass.
   c. Cardiopulmonary complications and physiotherapy management.
   d. Prescription of Postoperative preventive life style.
   e. Physiotherapeutic interventions for relief of pain in cardio-pulmonary conditions.

UNIT IV

1. Recent advances in cardio respiratory disorders.

RECOMMENDED TEXTBOOKS/REFERENCE BOOKS:

Textbooks:

1. Chest physiotherapy in intensive care unit by Mackenzie CF Williams and Wilkins.
2. Cardiovascular and Pulmonary physical therapy by Felter D.F. Mosby.
3. Exercise and the heart by Froelicher V.F. Elsevier.
4. Cardiovascular health and disease in women by Douglas PS. Saunders.
5. Acute care handbook for physical therapist b y Jamie C.Paz Michel P. West. Butterworth Heine Mann
6. Physical therapy for children by Campbell Suzann K, W.B Saunders, Philadelphia
7. Chest physiotherapy in Intensive care unit by Mackenzie, Williams & Wilkins.
8. Pulmonary Rehabilitation by John Hodgkin (Elsevier).

Reference Books:

1. Cardio pulmonary physical therapy by Joanne Watchie
2. Physiotherapy for respiratory and cardiac problems by Pryor JA; Prasad SA,Elsevier
3. Respiratory ca re – A guide to clinical practice by Burton G.G. & Hodgkin
4. Brompton's Chest Physiotherapy
5. Clinical application of mechanical ventilation By David W.Chang
6. ECG by P.J.Mehta

Note: Latest editions of suggested books are recommended

MPT SEMESTER - IV
CARDIORESPIRATORY DISORDERS-II (Lab)
(Minimum Hours Practical: 30)

Course code: MPT465 **L-0, T-0, P-2, C-1**

Course objective:

The main objective of this subject is to make student practice assessment in cardiopulmonary and vascular Physiotherapy. The student should understand the use of various therapeutic measures in depth to a specific condition and will be able to plan appropriate treatment regime based on the knowledge.

Course Contents:

1. Derive patient's treatment protocol based on the guidelines of cardiac and pulmonary rehabilitation.
2. Handling patient's with emergencies.
3. Application of tools and techniques for improving cardiac, pulmonary and vascular integrity and functioning.
4. ICU monitoring of patient's Parameters.

RECOMMENDED TEXTBOOKS/REFERENCE BOOKS:

Textbooks:

1. Chest physiotherapy in intensive care unit by Mackenzie CF Williams and Wilkins.
2. Cardiovascular and Pulmonary physical therapy by Felter D.F. Mosby.
3. Exercise and the heart by Froelicher V.F. Elsevier.
4. Cardiovascular health and disease in women by Douglas PS. Saunders.
5. Acute care handbook for physical therapist b y Jamie C.Paz Michel P. West. Butterworth Heine Mann
6. Physical therapy for children by Campbell Suzann K, W.B Saunders, Philadelphia
7. Chest physiotherapy in Intensive care unit by Mackenzie, Williams & Wilkins.
8. Pulmonary Rehabilitation by John Hodgkin (Elsevier).

Reference Books:

1. Cardio pulmonary physical therapy by Joanne Watchie
2. Physiotherapy for respiratory and cardiac problems by Pryor JA; Prasad SA,Elsevier
3. Respiratory ca re – A guide to clinical practice by Burton G.G. & Hodgkin
4. Brompton's Chest Physiotherapy
5. Clinical application of mechanical ventilation By David W.Chang
6. ECG by P.J.Mehta

Note: Latest editions of suggested books are recommended

MPT SEMESTER - I
CLINICAL TRAINING
(Minimum Hours Lab: 200)

Course code: MPT161 **L-0, T-0, P-16, C-8**

Clinical training is a mode through which students apply their classroom knowledge; all formal and practical "real-life" learning experiences and skills in clinical environment. Experiences would include those of short and long duration (eg, part-time, full-time, internships) and provide a variety of learning experiences through rotations in different units or departments within the same practice setting or health care system) to include comprehensive care of patients across the life span and related activities.

Each student will be under the supervision of a clinical supervisor at clinical education site who shall instruct and supervise students during their clinical posting sessions. Clinical supervisors are responsible for facilitating clinical learning experiences and assessing students' performance in cognitive, psychomotor, and affective domains as related to graduate-level clinical practice and academic and clinical performance expectations. The student shall acquire practical skills mentioned in syllabus for that particular semester during clinical training hours.

The students will start their clinical training from the 1st semester and it will go on till their fourth semester. In each semester, they will be posted for a minimum of four months in the departments related to their courses being learned in respective semesters. The student will be formally evaluated at the end of semester through vivavoce examinations by internal and external examiners.

MPT SEMESTER - II
CLINICAL TRAINING
(Minimum Hours Lab: 200)

Course code: MPT261 **L-0, T-0, P-16, C-8**

Clinical training is a mode through which students apply their classroom knowledge; all formal and practical "real-life" learning experiences and skills clinical environment. Experiences would include those of short and long duration (eg, part-time, full-time, internships) and provide a variety of learning experiences through rotations in different units or departments within the same practice setting or health care system) to include comprehensive care of patients across the life span and related activities.

Each student will be under the supervision of a clinical supervisor at clinical education site who shall instruct and supervise students during their clinical posting sessions. Clinical supervisors are responsible for facilitating clinical learning experiences and assessing students' performance in cognitive, psychomotor, and affective domains as related to graduate-level clinical practice and academic and clinical performance expectations. The student shall acquire practical skills mentioned in syllabus for that particular semester during clinical training hours.

The students will start their clinical training from the 1st semester and it will go on till their fourth semester. In each semester, they will be posted for a minimum of four months in the departments related to their courses being learned in respective semesters. The student will be formally evaluated at the end of semester through viva voce examinations by internal and external examiners.

MPT SEMESTER - III
CLINICAL TRAINING
(Minimum Hours Lab: 220)

Course code: MPT361 **L-0, T-0, P-18, C-9**

Clinical training is a mode through which students apply their classroom knowledge; all formal and practical "real-life" learning experiences and skills clinical environment. Experiences would include those of short and long duration (eg, part-time, full-time, internships) and provide a variety of learning experiences through rotations in different units or departments within the same practice setting or health care system) to include comprehensive care of patients across the life span and related activities.

Each student will be under the supervision of a clinical supervisor at clinical education site who shall instruct and supervise students during their clinical posting sessions. Clinical supervisors are responsible for facilitating clinical learning experiences and assessing students'performance in cognitive, psychomotor, and affective domains as related to graduate-level clinical practice and academic and clinical performance expectations. The student shall acquire practical skills mentioned in syllabus for that particular semester during clinical training hours.

The students will start their clinical training from the 1st semester and it will go on upto fourth Semester. In each semester, they will be posted for a minimum of four months in the departments related to their courses being learned in respective semesters. The student will be formally evaluated at the end of semester through vivavoce examinations by internal and external examiners.

MPT SEMESTER - IV
CLINICAL TRAINING
(Minimum Hours Lab: 220)

Course code: MPT461 **L-0, T-0, P-18, C-9**

In the final semester the student shall be tested for his/her clinical skills as well as the dissertation/major project work submitted by the student shall also be evaluated by internal as well as external experts as appointed by the university.

A. Clinical Training

Clinical training is a mode through which students apply their classroom knowledge; all formal and practical "real-life" learning experiences and skills clinical environment. Experiences would include those of short and long duration (eg, part-time, full-time, internships) and provide a variety of learning experiences through rotations in different units or departments within the same practice setting or health care system) to include comprehensive care of patients across the life span and related activities.

Each student will be under the supervision of a clinical supervisor at clinical education site who shall instruct and supervise students during their clinical posting sessions. Clinical supervisors are responsible for facilitating clinical learning experiences and assessing students' performance in cognitive, psychomotor, and affective domains as related to graduate-level clinical practice and academic and clinical performance expectations. The student shall acquire practical skills mentioned in syllabus for that particular semester during clinical training hours.

The students will start their clinical training from the 1st semester and it will go on upto fourth semester. In each semester, they will be posted for a minimum of four months in the departments related to their courses being learned in respective semesters. The student will be formally evaluated at the end of semester through viva voce examinations by internal and external examiners.

B. Dissertation/Major Project Work

The dissertation is aimed to train a postgraduate student in research methods and techniques. It includes identification of a problem, formulation of a hypothesis search and review of literature getting acquainted with recent advances, designing of a research study, collection of data, critical analysis, and comparison of results and drawing conclusions.
In the first year students shall submit to the ethical committee of the department in the prescribed performa a synopsis containing particulars of proposed dissertation work within six months from the date of commencement of the course on or before the dates notified by the university. The synopsis shall be sent through the proper channel. Such synopsis will be reviewed and the university will register the dissertation topic.

PG Guide:
A PG guide must have at-least 5 years of full time teaching and clinical experience in the core subject area after post-graduation. Notwithstanding the above clause in **a** case of acute shortage of qualified postgraduate guides, A PG teacher with 2 years experience after Masters can be considered.
Co-guide:
The co-guide if required shall be a recognized postgraduate teacher in the core area or faculty from other clinical or non- clinical departments of dental, medical, engineering or pharmacy colleges of TMU or any other research laboratory.
No change in the dissertation topic or guide shall be made without prior approval of the university. Guide will be only a facilitator, advisor of the concept and hold responsible in correctly directing the candidate in the methodology and not responsible for the outcome and results.
In the 2nd year, student will work on a selected topic of dissertation prepared under supervision and guidance of recognized faculty and will submit the same at the end of the year.
The dissertation should be written under the following headings.
1. Introduction
2. Aims or objectives of study
3. Review of literature
4. Material and methods
5. Results
6. Discussion
7. Conclusion
8. References
9. Appendices

The written text of dissertation shall not be less than 50 pages and shall not exceed 150 pages excluding references, tables, questionnaires and other annexure. It should be neatly typed in double line spacing on one side of paper (A4 size, 8.27" x 11.69") and bound properly. Spiral binding should be avoided. The guide, head of the department and head of the institution shall certify the dissertation.

Four copies of dissertation thus prepared shall be submitted to the Registrar (Evaluation), on or before the dates notified by the university. Candidates who fail to submit their dissertation on or before the stipulated date shall not be permitted to appear for the final year examination.

This shall be assessed by two examiners (internal examiner and external examiner) atleast. The dissertation shall be valued by examiners appointed by the university. Approved dissertation work is an essential precondition for a candidate to appear in the University examination.

Instructions to Candidates

Consider the following requirements for meeting the standards.

Paper

Use only one side of high-quality, plain white (unlined in any way) bond paper, minimum 20-lb weight, and 8-1/2" x 11" in size. Erasable paper should not be used.

Type Size and Print

Select fonts type Times New Roman and size of 10 to 12 characters. The size of the titles should be 14 and Bold, the size of subtitles should be 12 and bold. Print should be letter quality or laser (not dot matrix) printing with dark black characters that are consistently clear and dense. Use the same type of print and print size throughout the document.

Pagination

Number all of the pages of your document, including not only the principal text, but also all plates, tables, diagrams, maps, and so on. Roman numerals are used on the preliminary pages (pages up to the first page of text) and Arabic numerals are used on the text pages. The numbers themselves can be placed anywhere on the page, however they should be consistent.

Spacing

Use double spacing except for long quotations, footnotes, and endnotes, which are single spaced.

Margins

To allow for binding, the left-hand margin must be 1.5". Other margins should be 1.0". Diagrams, photographs, or facsimiles in any form should be a standard page size, or if larger, folded so that a free left-hand margin of 1.5" remains and the folded sheet is not larger than the standard page.

Photographs

Professional quality black-and-white photographs are necessary for clear reproduction. Colours are allowed, but you should ascertain that the coloured figure will copy clearly

File Format

Thesis or Dissertations format should be in .Doc (Ms Word Document) or PDF (portable Document format), Image files in JPG or TIFF format and Audio Visual in AVI (Audio video interleave), GIF, MPEG (moving picture expert) files format

TEERTHANKER MAHAVEER UNIVERSITY

<----------Title---------->

<----------Subtitle---------->

by

<--Name of the Candidate--->

Dissertation Submitted to the
Department of Physiotherapy, Moradabad, Uttar Pradesh
In partial fulfilment of the requirements for the degree of

MASTER OF PHYSIOTHERAPY

in

<elective course>

Under the guidance of

< ---Name of the Guide--- >

Department of Physiotherapy
Moradabad
<--Year-->

TEERTHANKER MAHAVEER UNIVERSITY

DECLARATION BY THE CANDIDATE

I hereby declare that this dissertation/thesis entitled "<----------Title----------->" is a bonafide and genuine research work carried out by me under the guidance of <--Name & designation of the Guide--- >.

Date :

Place:

Signature of the Candidate

Name:

CERTIFICATE BY THE GUIDE

This is to certify that the dissertation entitled "<----------Title----------> "is a bonafide research work done by Name of the Candidate in partial fulfillment of the requirement for the degree of MPT.

Date :

Place:

Signature of the Guide

Name

Designation & Department

ENDORSEMENT BY THE HOD, PRINCIPAL/HEAD OF THE INSTITUTION

This is to certify that the dissertation entitled "<----------Title----------> "is a bonafide research work done by Name of the Candidate under the guidance of Name & designation of the Guide.

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LIST OF ABBREVIATIONS USED

(in alphabetical order)

ABSTRACT

(Max. 200-300 words)

Background & Objectives

Methods

Results

Interpretation & Conclusion

Keywords

(Max. 10)

Keywords shall be chosen from MeSH (Medical Subject Headings)

(Each keyword should be separated by semicolon)

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2. OBJECTIVES

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4. METHODOLOGY

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7. CONCLUSION

8. SUMMARY

9. BIBLIOGRAPHIC REFERENCES

(Vancouver Format)

Reference list at end of paper

References should be numbered consecutively in the order in which they are first mentioned in the text; theyshould notbe listed alphabetically by author or title or put in date order.

Printed publications

1. Book

Example:

a. Neal MJ. Medical pharmacology at a glance. Oxford: Blackwell Scientific; 1987.
b. Rinsgiven MK, Bond D. Gerontology and leadership skills for nurses. 2nd ed. Albany (NY): Delmar Publishers; 1996.

Note: Where there are more than six authors list the first six names, followed by et al. (and others).

2. Government publication/Corporate author

Example:

a. Department of Health. Saving lives: our healthier nation. London: Stationery Office; 1999 (Cm 4386).
b. Institute of Medicine (US). Looking at the future of the Medicaid program. Washington: The Institute; 1992.

3. Report

Example:

a. Confidential enquiries into stillbirths and deaths in infancy. 5th Report. London: Stationery Office; 1998.
b. Chief Medical Officer's Committee on Medical Aspects of Food. Nutritional aspects of the development of cancer. London: Stationery Office; 1998. (Department of Health report on health and social subjects 48.)

4. Conference paper in published proceedings

Example:

a. Bengtsson S, Solheim BG. Enforcement of data protection, privacy and security in medical informatics. In: Lun KC, Degoulet P, Piemme TE, Rienhoff O, editors. MEDINFO 92.
b. Proceedings of the 7th World Congress on Medical Informatics; 1992 Sep 6-10; Geneva, Switzerland. Amsterdam: North-Holland; 1992. p.1561-5.

5. Journal article

Example:

a. You CH, Lee KY, Chey YW, Menguy R. Electrogastrographic study of patients with unexplained nausea, bloating and vomiting. Gastroenterology 1980;79:311-4.
b. Vega KJ, Pina I, Krevsky B. Heart transplantation is associated with an increased risk for pancreatobiliary disease. Ann Intern Med 1996 Jun 1;124 (11):980-3.
c. Parkin DM, Clayton D, Black RJ, Masuyer E, Friedl HP, Ivanov E, et al. Childhood leukaemia in Europe after Chernobyl: 5 year follow-up. Br J Cancer 1996;73:1006-12.
d. Cancer in South Africa [editorial]. S Afr MEd J 1994;84:15.

Note:

a. Journal titles which are just a single word are not abbreviated.
b. The titles of other journals should be abbreviated according to the style used in Index Medicus. Consult the List of Journals Indexed in Index Medicus, published in the January issue of Index Medicus. The list can also be obtained through the NLM=s website (http://www.nlm.nih.gov).

6. Newspaper article

Example:

a. Lee G. Hospitalizations tied to ozone pollution: study estimates 50,000 admissions annually. The Washington Post 1996 Jun 21; Sect. A:3 (col. 5).

7. Electronic media

Individual works

Example:

a. CDI, clinical dermatology illustrated [monograph on CD-ROM]. Reeves JRT, Maibach H. CMEA Multimedia Group, 2nd ed. Version 2.0. San Diego: CMEA; 1995.

8. Journal article

Example:

Morse SS. Factors in the emergence of infectious diseases. Emerg Infect Dis [serial online]1995 Jan-Mar [cited 1996 Jun 5];1(1):[24 screens]. Available from: URL: http://www.cdc.gov/ncidod/EID/eid.htm

9. Computer File

Example:

a. Hemodynamics III: the ups and downs of hemodynamics [computer program]. Version 2.2.Orlando (FL): Computerized Educational Systems; 1993.Website (Including the access date)

10. ANNEXURE

Master of Physiotherapy
SUMMER TRAINING

Summer Training provides students with a look into the real-world and a hands-on learning experience with patients and healthcare industry. They gain knowledge about recent trends in treatment strategies practised by different health care providers. It also provides a great networking opportunity for students, which shall be helpful to them for future employment.

Duration of such training is stipulated for at least eight to twelve weeks long; which shall be based on draft of academic calendar of the department for respective program every year. It is a mandate to undergo summer training for each student enrolled in masters program.

After completion of training, student shall submit a copy of their training certificate; duly signed by designated staff of that premier Institution/Hospital.