

GURUGRAM UNIVERSITY, GURUGRAM

(Established under Haryana Act 17 of 2017)



Structure & Syllabi of

**Master of Physiotherapy
(Orthopaedics)**

(Two Year Post Graduate Program)

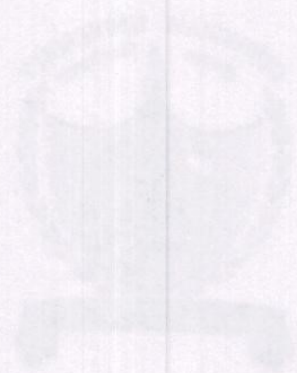
Effective from the Academic Session-2020-21

**Department of Physiotherapy
Gurugram University Gurugram
Haryana**

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GURUGRAM UNIVERSITY, GURUGRAM

Established under Mysore Act 17 of 2013



Department of Psychology

Master of Psychology

(Ordinances)

Two Year Four Semester Program

Effective from the Academic Session 2020-21

Department of Psychology

Gurugram University Gurugram

Haryana

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DEPARTMENT OF PHYSIOTHERAPY

GURUGRAM UNIVERSITY

Name of the course : The course will be referred to as a Master of Physiotherapy (MPT).

Duration of the course- The program of study for MPT shall extend over a period of four semesters (two academic years) .

Intake- There will be 10 seats in each specialization.

ELECTIVES OFFERED AND DEGREE AWARDED

1.MASTER OF PHYSIOTHERAPY(CARDIOPULMONARY)

2. MASTER OF PHYSIOTHERAPY(ORTHOPEDICS)

DESCRIPTION OF THE COURSE

Master of Physiotherapy (MPT) is a two year fulltime regular programme having multiple pedagogy methods, ranging from classroom teaching, self-academic activities , clinical training and clinical presentations. The programme also focusses on research component with students undergoing training to develop, conduct and infer research findings. The available specializations under this programme are Cardiopulmonary and Orthopaedics. The course is divided into 4 semester with an end semester examination. The students will be continuously evaluated during the programme with theory and practical evaluation, group discussions, seminars and critical appraisal of existing literature related to Physiotherapy.

GOALS OF COURSE

Preparation of a postgraduate student towards his/her professional autonomy with self-regulating discipline at par with global standards.

Formation of base of the professional practice by referral as well as first contact mode using evidence based practice.

- I. Acquainting a student with concept of quality care at the institutional as well as the community levels.
- II. Inculcation of appropriate professional relationship in multidisciplinary set up, patient management and co-partnership basis.
- III. Preparation of students to address problems related to health education and community physiotherapy.
- IV. Practicing the concept of protection of rights of the community during referral as well as first contact practice.
- V. Incorporation of concept of management in physiotherapy.

OBJECTIVES OF THE COURSE

- I. To prepare a post-graduate student to acquire sound knowledge of the structure and function of the human movement (including movement of fluids and air into the body)
- II. To prepare the post graduate student to acquire essential knowledge of all pathological, pathoanatomical, pathophysiological diseases. (including clinical, physical and functional)
- III. Demonstrate the ability in the conduct of diagnostic procedures on the basis of kinesiological, physiological, environmental and psycho-socio-cultural aspects so as to reach the functional diagnosis enhancing professional autonomy.

- IV. To form base of professional practice by referral as well as first contact mode using evidence based practices.
- V. To plan and execute independent research project/dissertation in order to validate techniques and technology in practice of physiotherapy on any selected subspecialty.
- VI. To inculcate appropriate professional relationships in multi-disciplinary set up, patient management and co-partnership basis.

COURSE OUTCOME:

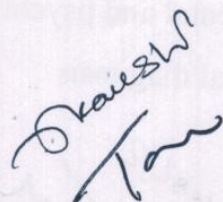
On completion of the study of this Course the student should be able

- To advance and comprehend the knowledge of the structure & function of the human body in relevance to Physiotherapy
- To correlate and apply the knowledge gained, in understanding and analysing the dysfunction of the human body.

ELIGIBILITY FOR ADMISSION

Candidates admitted into the Master of Physiotherapy course should have passed the B.P.T. degree examination OR equivalent from a UGC recognised college/University and must have completed six months compulsory rotatory internship.

Note - It is mandatory to submit a migration certificate obtained from the respective university where the candidate had passed his/her qualifying degree (BPT)



MEDIUM OF INSTRUCTION:

English shall be the medium of instruction for all the subjects of study and for examination of the course.

THE CURRICULUM

Master of Physiotherapy (M.P.T.)

Total theory papers: 12

Total Practical: 07

Dissertation Viva voce: 01

Mode of Curriculum delivery and execution includes classroom teaching, assignments, tests, lab work, project, case studies, participation in relevant events, field visits and educational tour etc.

ATTENDANCE AND PROGRESS

A. A candidate is required to put in at least 75% attendance in individual courses considering theory and practical separately.

B. The teacher in -charge will consolidate the attendance record for theory & practical separately for each semester. Attendance on account of participation in the prescribed functions of NCC, NSS, Inter-University Sports, Educational tours/ Fieldwork, shall be credited to the aggregate, provided the attendance record is duly signed by the Officer in-charge is sent to the Chairman of the Department within two weeks of the function / activity etc.

D. The statement of attendance of students shall be displayed on the School notice board twice in each semester. Copies of the same shall be kept in the Office of the Chairman of the concerned Department for record. Notice displayed on notice board shall be deemed to be a proper notification and no individual notice to students will be necessary.

E. If a student is found to be continuously absent from the classes without information for a period of fifteen days, the teacher in-charge shall report it to the Chairman for necessary action.

SCHEME OF EXAMINATION FOR MPT

- The University Examination will be at the end of every semester. The candidate must obtain 50% marks in internal assessment, to be eligible for appearing the University examinations.
- Marks obtained in internal examination, attendance and continues appraisal will be simplified for 20 as internal marks.
- In case of marks simplified are in decimals, will be rounded to the nearest round figure, (e.g.) 12.01 to 12.49 will be considered to the round sum as 12 and 12.50 to 12.99 as 13.

INTERNAL ASSESSMENT

- A. There will be a total of 3 internal assessments in an academic session and best 2 out of 3 will be counted for final assessment. Tests will carry a weightage of 10 marks in theory/practical, 5marks for attendance and 5 for assignment/Presentation, Behaviour conduct. The total weightage of the internal exams will be 20% of total marks in each subject in the Final/annual exams.
- B. The Dates of the internal assessment exam will be notified in the academic calendar.
- C. Sessional exams are to be conducted during the scheduled lecture time of the subject and other classes scheduled for that day are not to be cancelled.
- E. A promoted candidate, who has to reappear in the Semester examination of the paper, will retain internal assessment marks of the previous academic session
- F. For 'Seminars on Clinical Issues' the marks will be based on presentations done by the students throughout the session. The assessment will be done by

teachers of the specialty.

G. In the case of readmission the candidate shall go through the internal assessment process afresh and shall retain nothing of the previous academic session.

H. Missing an examination without prior permission of the competent authority will be counted as an attempt.

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BS

SEMESTER I

S.No	Course	Subject
1	MPT 101	Review of Health Sciences
2	MPT 102	Exercise Physiology testing & prescription
3	MPT 103	Biomechanics & Kinesiology
4	MPT 104	Biostatistics and Research Methodology
5	MPT 105P	Practical I- Biomechanics & Kinesiology
6	MPT 106P	Practical- II Exercise Physiology, Testing & Prescription.

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Tan

BS

S. No	Course	Subject	Marks						
			Teaching Hours	Credit	Theory		Practical		Total
					Internal	External	Internal	External	Marks
1	MPT 101	Review of Health Sciences	60	4	20	80	---	---	100
2	MPT 102	Exercise Physiology testing & prescription	60	4	20	80	---	---	100
3	MPT 103	Biomechanics & Kinesiology	60	4	20	80	---	---	100
4	MPT 104	Biostatistics and Research Methodology	60	4	20	80	---	---	100
5	MPT 105	Practical I- Biomechanics & Kinesiology	120	4	---	---	20	80	100
6	MPT 106P	Practical- II Exercise Physiology, Testing & Prescription	120	4	---	---	20	80	100
7		Elective 1*	60	4	20	80	--	--	100
		Total	540	28	100	400	40	160	700

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E1 - Elective subjects for Semester I

TITLE OF PAPER	TEACHING HRS	CREDITS	MAXIMUM MARKS ALLOWED			
Hospital Management and Planning	60	4	80		20	100
Social and Preventive medicine	60	4	80		20	100
Academic Writing	60	4	80		20	100

CHOOSE ANY ONE FROM THE LIST

*MOOC. The subjects which the students can opt from MOOC will be notified by the department semester-wise time to time.

*Dr. Anshu
Taneja*

SEMESTER II

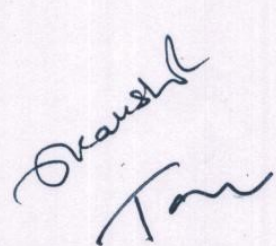
S.No	Course	Subject
1	MPT 201	Applied Physiotherapy
2	MPT 202	Manual Therapy
3	MPT 203	Assessment & Special Issues in Orthopaedic Physiotherapy
4	MPT 204	Physiotherapy in Orthopaedic Trauma
5	MPT 205P	Practical – III Orthopaedic Examination, Evaluation and Manual therapy.
6	MPT 206P	Practical – IV Evaluative Clinical Practice

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S. No	Course	Subject	Marks						
			Teaching Hours	Credits	Theory		Practical		Total
					Internal	External	Internal	External	
1	MPT 201	Applied Physiotherapy	60	4	20	80	---	---	100
2	MPT 202	Manual Therapy	60	4	20	80	---	---	100
3	MPT 203	Assessment & Special Issues in Orthopaedic Physiotherapy	60	4	20	80	---	---	100
4	MPT 204	Physiotherapy in Orthopaedic Trauma	60	4	20	80	-	..	100
5	MPT 205P	Practical – III Orthopaedic Examination, Evaluation and Manual therapy	120	4	---	---	20	80	100
6	MPT 206P	Practical – IV Evaluative Clinical Practical -I	120	4	---	---	20	80	100
7		Skills acquisition and refinement (Teaching Assignment, Seminars & Case Studies)	90	4	---	---	---	---	---
		Total	570	28	380	320	40	160	600

SEMESTER III

S.No	Course	Subject	Marks						
			Teaching Hours	Credits	Theory		Practical		Total Marks
					Internal	External	Internal	External	
1	MPT 301	Orthopaedic Medicine and Surgery	60	4	20	80	---	---	100
2	MPT 302	Management and Pedagogy in Physiotherapy	60	4	20	80	---	---	100
3	MPT 303	Geriatric, Palliative & Rheumatological Physiotherapy	60	4	20	80	---	---	100
4	MPT 304P	Practical V Orthopaedic Medicine and Surgery	120	4	--	--	20	80	100
5	MPT 305P	Practical – VI Evaluative Clinical Practice	120	4	--	--	20	80	100
6		Clinical training	110	4	---	---	---	---	---
7		Skills acquisition and refinement (Teaching Assignment, Seminars & Case Studies)	50	4	---	---	---	---	---
		Total	580	28	60	240	40	160	600




SEMESTER IV

S NO.	SUBJECT CODE	COURSE SUBJECT
1	MPT 401	Professional development and Ethics
2	MPT 402	Dissertation
3	MPT 403P	Skill enhancing practical

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S.No	Course	Subject	Marks						
			Teaching Hours	Credits	Theory		Practical		Total Marks
					Internal	External	Internal	External	
1	MPT 401	Professional development and Ethics	60	4	20	80	---	---	100
2	MPT 402	Dissertation	160	8	--	--	100	100	200
3	MPT 403P	Skill enhancing practical	--	--	---	----	100	100	200
		Clinical Training	140	6		---	---	---	---
		TOTAL	360	18	40	160	20	80	500

Total Hours = 2050 hrs

Total credits = 102

Students shall undergo clinical and field posting for refinement and acquisition of clinical skills in the clinics of the department or any other places as may require time to time. Students shall take up structured teaching assignments during the entire course of two years. Viva-Voce for the dissertation work and Practical Examination will be conducted at end of the fourth semester. The candidate shall be evaluated for competency in clinical skills, clinical decision making and teaching and communication skills.

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SEMESTER I

Subject Code	Title	Total Hours	Hours /week	Credits	IA Marks	SE Marks	Total Marks
MPT 101	Review of Health Sciences	60	4	4	20	80	100

Course Description: This course covers the topics related to advances in health sciences with particular emphasis on anatomical, physiological and biochemical advances.

Course Objective: This course aims to study the recent advances in health sciences.

Course Outcome: On completion of the study of this Course the student should be able :

- To advance and comprehend the knowledge of the structure & function of the human body in relevance to Physiotherapy
- To correlate and apply the knowledge gained, in understanding and analysing the dysfunction of the human body.

Section - I

Applied Anatomy

1. Topographic anatomy concerning the neck, arm, leg and back with a focus on vessels, nerves and muscles/fascia and joints.
2. Topographic anatomy concerning thorax, abdomen and the pelvic region with a focus on the abdominal wall, viscera, vessels and nerves.
3. Surface anatomy and palpitations concerning extremities, thorax, abdomen and the pelvic region Patho-anatomy of peripheral nerve injuries, various bone pathologies.

Applied General Physiology

1. **Cardiovascular system**
 - a) Physical characteristics of systemic circulation, Pressure pulses
 - b) Oxygen demand theory of local blood flow circulation
 - c) Nervous control of blood circulation, Humorous control of blood circulation,
 - d) Cardiac output and its regulation
2. **Respiratory System**
 - a) Review of mechanics of respiration
 - b) Pulmonary volumes and capacities
 - c) Methods of studying respiratory abnormalities
 - d) Regulation of Respiration

Section – II

Clinical Biochemistry

I. Review of Metabolism

1. Carbohydrates, Lipids, Proteins and fats
2. Water: Fluid and electrolyte balance, Water and sodium balance

II. Enzymes and Markers in Blood

1. Cardiovascular Markers: Troponin, Creatine Kinase, Lactate Dehydrogenase, Myoglobin, Aspartate transaminase.
2. Neuromuscular Markers: Acetylcholine, Dopamine, GABA.

3. Inflammatory Markers and Free Radicals: TNF alpha, Interleukins, NO, H₂O₂, Superoxides

III. Biochemical And Genetic Basis Of Diseases

1. Cardiovascular Disorders: Myocardial Infarction, Cardiomyopathy, Diabetes, Atherosclerosis
2. Muscular Disorders: Cystic Fibrosis, Congenital muscular dystrophy, Duchenne muscular dystrophy,
3. Biochemical, physiological and anatomical change in Ability, Disabilities, Ageing

Pharmacology

1. Drugs used in Pain
2. Local Anaesthetics
3. Steroids
4. Muscle Relaxants
5. Drugs acting on Central and Autonomic Nervous System
6. Topically acting upon Cardio Respiratory system
7. Drugs acting upon Musculoskeletal system

Essential Readings

1. Clinical Biochemistry (Fundamentals of Biomedical Science) by Nessar Ahmed
2. Clinical Biochemistry 6th Edition by Michael Murphy Rajeev Srivastava Kevin Deans ISBN: 9780702072987 eBook ISBN: 9780702072970
3. A textbook of Biochemistry by B D Chaurasia
4. Textbook of Medical Physiology Guyton and Hall
5. Textbook of Physiology by A K Jain
6. Essential of Medical Pharmacology/ by KD Tripathi, Edition 3rd (2005)

Suggested Readings

1. Pathology implications for Physical Therapists by Catherine C. Goodman
2. Hutchison's Clinical Methods: An Integrated Approach to Clinical Practice, 23e (Hutchinson's clinical methods) by Michael Glynn MA, William M Drake
3. Pharmacology Drug Actions & Reactions, Edition 2nd
4. Blueprints Notes & Cases: Pharmacology, Edition 1st
5. Textbook of Pharmacology, Seth, SD., Edition 3rd

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Subject Code	Title	Total Hours	Hours /week	Credits	IA Marks	SE Marks	Total Marks
MPT 102	Exercise Physiology testing & prescription	60	4	4	20	80	100

Course description: This course aims to deliver scientifically based standards on exercise testing and prescription. It prepares students through the process of selecting and administering fitness assessments, using Guidelines to interpret results, and drafting an exercise prescription that is in line with Guidelines parameters.

Course Objective: This course should deliver the concepts in exercise physiology and prepares students to test and prescribe suitable exercises to different groups of population.

Course Outcome: On completion of the study of this Course the student should be able to select and administer fitness assessments, using Guidelines to interpret results, and drafting an exercise prescription to different populations.

Section – I

I. Energy Transfer for Physical Activity

1. Energy transfer in body
2. Energy transfer in exercise and activities

II. Cardiovascular System And Exercise

1. Cardiovascular regulation and integration during exercise
2. Cardiovascular adaptations to sustained aerobic exercises
3. Cardiovascular Endurance testing
4. Athletes heart and sudden cardiac death in sports
5. Lipids and sports, protection from coronary heart disease, exercise and optimization of lipid profile

III. Respiratory System and Exercise

1. Regulation of respiration during exercise
2. Acid-Base regulation during exercise
3. Respiratory adaptations to sustained aerobic exercise
4. Air Conditioning, Second wind, Oxygen debt

Section – II

IV. Skeletal System and Exercise

1. Growth and exercise
2. Repair and adaptation during exercise
3. Biochemical responses and molecular mechanisms to endurance and power training
4. Effects of training and detraining
5. Strength Measurement
6. Dynamometry
7. Muscle endurance testing
8. Assessment of muscle damage & fatigue

V Gastrointestinal Tract and Endocrine System and Exercise

1. Effect of exercise on GIT and liver
2. Hormone regulation of fluid and electrolytes during exercise
3. Stress hormones in exercise
4. Opioids and Runners High

VI Exercise Testing prescription and Aging

1. Human performance analysis , Electrophysiological assessment
2. Exercise stress testing for diagnosis of CHD
3. Body composition
4. Aging and physiological function
5. Exercise and longevity
6. Exercise prescription for healthy, aged, sedentary adults, Osteoporotic and mood disorders.

Essential Readings

1. Exercise Physiology by Mc Ardle, Katch and katch
2. TextBook of Radiology by K. Bhargava
3. Electromyography and Neuromuscular disorders by David C. Preston
4. Cram's Introduction to Surface Electromyography
5. ACSM's Guidelines for Exercise Testing and Prescription Paperback –by American College of Sports Medicine

Suggested Readings

1. Essentials of Electromyography by Gabriel
2. Johnson's Practical Electromyography Hardcover – 15 Sep 2005 by Willaim S. Pease (Editor), Henry L. Lew (Editor), Ernest W. Johnson

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Course No.	Title	Total Hours	Hours /week	Credits	IA Marks	SE Marks	Total Marks
MPT 103	Biomechanics and Kinesiology	60	4	4	20	80	100

Course Description: the course covers the understanding of Biomechanics and kinesiology of body movement.

Course Objective: the course should enable the student to acquire in depth knowledge in understanding the biomechanics and kinesiology.

Course Outcome: On completion of the study of this Course the student should be able:

- to identify and apply the principles of biomechanics and kinesiology in understanding the normal functioning of the human body.
- To identify and apply the principles of biomechanics in understanding pathomechanics of various conditions.
- To use these principles in managing various clinical conditions.

SECTION I (Biomechanics)

I Introduction

1. Nature and importance of Biomechanics in Physiotherapy
2. Principle of Biomechanics

II Movement Analysis

1. Biomechanics of shoulder and shoulder complex, elbow complex, wrist and hand complex
2. Biomechanics of pelvic, hip, knee, ankle & foot complex
3. Biomechanics of spine
4. Neuro biomechanics
5. Posture and Gait analysis
6. Biomechanical Analysis & Techniques – Force platforms
7. Instrumentation and methods of movement analysis.

Section II (Kinesiology)

I Introduction To Kinematics

1. Definition, aims, objectives and role of Kinesiology in sports physiotherapy.
2. Review of fundamental concepts (applied aspect), Centre of gravity, Line of gravity, Planes, Lever system in Body, Fundamental starting positions.
3. Review of linear and angular kinematics

II Mechanics Of Musculoskeletal System

1. Tissue loads, response of tissues to forces- Stress, Strain, Stiffness and mechanical strength, viscoelasticity
2. Physical Properties of bone, cartilage, tendon and ligaments, functional adaptation under pathological conditions.
3. Impaired neuromuscular control, muscular force regulation in Frame work and joints of the body: Influence of trauma and classification of the muscles, Relation of structure, functions, role of muscles, types of Muscle, contractions (Static, Concentric and Eccentric), Two joint Muscles, Angle of pull, Role of Gravity affecting muscular action.

Essential Readings

1. Kinesiology by Carol A. Oatis
2. Kinesiology – Scientific Basis of Human Motion, Brown & Benchmark
3. Kinesiology and Applied Anatomy by Philip J. Rasch.
4. Clinical Biomechanics of Spine by Punjabi and white
5. Biomechanics – A Qualitative approach for studying Human Motion
6. Joint Structure and Function - A Comprehensive Analysis by Norkin
7. Neumann, Donald A. - Kinesiology of the musculoskeletal system _ foundations for physical

Suggested Readings

1. Basic Biomechanics in Sports and Orthopedic Therapy
2. The Biomechanics of Sports Techniques by Hay, James G.
3. Basic Biomechanics of Musculoskeletal System by Nordin
4. Introduction to Sports biomechanics
5. Ted Temertzoglou Kinesiology: Lab Manual & Study Guide (2015).
6. Rehabilitation.-Mosby_Elsevier (2010)

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Course No.	Title	Total Hours	Hours /week	Credits	IA Marks	SE Marks	Total Marks
MPTC 104	Biostatistics and Research Methodology	60	4	4	20	80	100

Course Description: The course covers the concept of research methodology, EBP and biostatistics related to physical therapy

Course Objective: The course aims to introduce the principles of research, methods of research and analysing the research studies using Biostatistics.

Course Outcome: On completion of the study of this Course the student should be able:

- To understand the methods of the research process and design so as to effectively plan a research.
- To understand the statistical measures used in the analysis and interpretation of research data.
- To acquire skills of critically reviewing the literature.

SECTION- I (RESEARCH METHODOLOGY)

I Research In Physiotherapy

1. Introduction
2. Research for Physiotherapist: Why, how and when?
3. Research – Definition, concept, purpose, approaches
4. Web Source for physiotherapists

II Research Fundamentals

1. Define measurement
2. Measurement framework
3. Scales of measurement
4. Pilot study
5. Types of variables
6. Reliability & Validity
7. Drawing tables, graphs, master charts etc.

III Writing A Research Proposal, Critiquing A Research Article

1. Defining a problem
2. Review of literature
3. Formulating a question, operational definition
4. Inclusion and Exclusion criteria
5. Forming groups
6. Data collection & analysis
7. Results, Interpretation, Conclusion, Discussion
8. Informed consent
9. Limitations

IV Research Design

1. Principle of designing
2. Design, instrumentation & analysis for qualitative research
3. Design, instrumentation & analysis for quantitative research
4. Design, instrumentation & analysis for quasi-experimental research

5. Design models utilized in Physiotherapy

V Evidence Based Practice

Concept of evidence based practice by addressing topics related to

1. Research design and measurement
2. Measurement error
3. Case design studies and
4. Interpretation of clinical research

SECTION -II (BIOSTATISTICS)

I Introduction to Biostatistics

1. Introduction- Definition and Application in Physiotherapy
2. Data Presentation
3. Methods of Sampling
4. Sampling distribution
5. Standard error
6. Types I & II error
7. Hypothesis Testing
8. Null Hypothesis
9. Alternative hypothesis
10. Acceptance & rejection of null hypothesis
11. Level of significance

II Measures of Central Value & Measures Of Dispersion

1. Arithmetic mean, median mode, Relationship between them
2. Partition values – Quartiles, Deciles, Percentiles
3. Graphical determination
4. Range
5. Mean Deviation
6. Standard Deviation
7. Normal Distribution Curve- Properties of normal distribution, Standard normal distribution
8. Transformation of normal random variables.
9. Inverse transformation
10. Normal approximation of Bioaxial distribution.

III Correlations & Regression Analysis

1. Bivariate distribution
2. Scatter diagram
3. Coefficient of correlation
4. Calculation & interpretation of correlation coefficient
5. T-test, Z-test, P-value
6. Lines of regression
7. Calculation of Regression Coefficient

IV Probability (In Brief)

1. Basic Definition: Events, sample space and probabilities
2. Basic rules for probability
3. The range of values
4. The Rule of complement
5. Mutually exclusive events

Dr. Anshu
B. Sharma

6. Conditional probability
7. Independence of events
8. Combinatorial concepts
9. Law of Total probability and Baye's theorem

V Analysis and Evaluation

1. Parametric & Nonparametric Parametric Tests- Chi square test, Mann-Whitney U test, Wilcoxon Signed test, Kruskal-Wallis test, Friedman test, T-test/student T test, Analysis of variance
2. Agreement Analysis
3. Software Used in Statistical Analysis and research

Essential Readings:

1. Physical Therapy Research by Elizabeth
2. An Introduction to Biostatistics 3rd Edition, by Thomas Glover, Kevin Mitchell
3. Introduction to research in Health Sciences by Stephen Polgar, BSc(Hons), MSc, Shane A. Thomas
4. Research Methodology: Methods and Techniques by C R Kothari
5. Research Design: Qualitative, Quantitative, and Mixed Methods Approaches by John W. Creswell

Suggested Readings:

1. Research for physiotherapists Research for Physiotherapists: Project Design and Analysis by Carolyn M. Hicks
2. APA Handbook of Research Methods in Psychology by Harris Cooper, PhD
3. Elements of Research in Physical Therapy by Dean P. Currier
4. Mahajan's Methods In Biostatistics For Medical Students And Research Workers by Bratati Banerjee (Author)

T. S.

Dr. Anshu B. Sharma

Course No.	Title	Total Hours	Hours /week	Credits	IA Marks	SE Marks	Total Marks
MPT 105P	Practical I- Biomechanics & Kinesiology	120	4	4	20	80	100

Course Description: The course covers topics related to practical training on biomechanics and kinesiology.

Course Objective: The course should enable the student to attain in-depth knowledge and skill in techniques used in biomechanics and kinesiology.

Course Outcome: The student should be able to demonstrate skill in techniques used in biomechanics and kinesiology.

1. Perform thorough biomechanical evaluation
2. Qualitative and quantitative analyses of range of motion
3. Calculation of impulse and take off velocity and height of jump during take-off in a standing vertical jump
4. Calculate and infer Angular kinetics of exercise
5. Detection of scapular position in rotation of spinous process
6. Measurement of functional limb varus under bilateral and unilateral stance
7. Subtalar neutral joint positioning
8. Determination of Q-angle
9. Measurement of eversion and inversion ranges at subtalar joint
10. Measurement of popliteal angle
11. Measurement of calcaneal inversion and eversion in non -weight bearing and weight bearing stance

Dr. Anshu
Dr. Sharma

Course No.	Title	Total Hours	Hours /week	Credits	IA Marks	SE Marks	Total Marks
MPT 106P	Practical- II Exercise Physiology, Testing & Prescription	120	4	4	20	80	100

Course Description: The course covers topics related to practical training on exercise physiology, exercise testing and exercise prescription for different age groups and patient population. The student also undergoes hands-on training in physiology and clinical biochemistry.

Course Objective: The course should enable the student to attain in-depth knowledge and skill in techniques used in exercise physiology, exercise testing and exercise prescription for different age groups and patient populations. They should be able to attain skills in physiology and clinical biochemistry techniques also.

Course Outcome: The student should be able:

- To demonstrate skill in techniques used in exercise physiology, exercise testing and exercise prescription for different age groups and patient populations.
 - To demonstrate skills in physiology and clinical biochemistry techniques also.
1. Energy expenditure and exercise
 2. Energy metabolism
 3. Cardiovascular effect of exercise
 4. Respiratory air flow and volume
 5. Respiratory gas analysis
 6. Blood pressure in humans
 7. Electromyogram(EMG)recording and interpretation
 8. Oxygen concentration (O₂ measurements)
 9. Sensory and motor nerve responses (NCV)recording and interpretation

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SEMESTER II

Course No.	Title	Total Hours	Hours /week	Credits	IA Marks	SE Marks	Total Marks
MPT 201	Applied physiotherapy	120	4	4	20	80	100

Course objective and course outcomes

This course provides the student with the knowledge of the various exercise therapy and electrotherapy treatment techniques and therapeutic modalities along with their applications in various conditions.

UNIT I

- i) Assessment techniques: Manual Muscle Testing and Goniometry
- ii) Stretching and Mobilization
- iii) Re-education and Strengthening
- iv) Balance and Coordination Exercise
- v) Gait Analysis and Training (Both Normal and Pathological Gaits)

UNIT II

- i) Relaxation and Soft Tissue Manipulations
- ii) Posture
- iii) PNF and Neuromuscular Coordination
- iv) Hydrotherapy
- v) Joint Mobilization

UNIT III

- i) General Review of Low, Medium and High frequency currents and their modifications like Di-dynamic and Russian Currents etc.
- ii) Laser
- iii) Cryotherapy

UNIT IV

- i) UVR and IRR
- ii) Other Thermal Modalities like SWD, MWD, HydroCollator, Wax therapy and Fluido-therapy

Reference books:

1. The Principles of Exercise Therapy/ Gardiner, M Dena.,Edition 4th (2005)
2. Therapeutic Exercise: Foundation and Techniques/ by Carolyn Kisner and Lynn Allen Colby.,Edition 6th (2012)
3. Practical Exercise Therapy/ by Margaret Hollis &Phyl Fletcher- Cook, Edition 4th (1999)
4. Electrotherapy Explained: Principles and Practice/ by John Low, Ann Reed and Mary Dyson, Edition 3rd (1999)
5. Clayton's Electrotherapy/ edited by Sheila Kitchen and Sarah Bazin, Edition 10(2000)

6. Muscles Testing and Function/ by Florence Peterson Kendall (et al.),Edition 5th,(2005)
7. Therapeutic Modalities for Physical Therapists/ by William E Prentice, William Quillen and Frank Underwood, Edition 2,(2002)
8. Therapeutic Exercise Moving toward Function/ by Carrie M Hall and Lori Thein Brody.,Edition 3(2010)
9. Daniels and Worthingham's Muscle Testing Techniques of Manual Examination/ by Helen J Hislop and Jacqueline Montgomery, Edition 9,(2013)

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Course No.	Title	Total Hours	Hours /week	Credits	IA Marks	SE Marks	Total Marks
MPT 202	Manual therapy	120	4	4	20	80	100

Course Description: The course covers topics on various school of thoughts of joint, muscle and neural tissue manual therapy techniques . The course aims to provide a more functional and comprehensive approach based on manual therapy to manage a range of neuromusculoskeletal conditions.

Course Objective: The course should enable the student to acquire in-depth understanding and skill in managing musculoskeletal conditions by using Manual therapy techniques

Course Outcome: The student should be able to compare & contrast the outcome of various manual and mechanical therapy approaches.

I. Segmental Stabilization Concepts Of Spine

1. Muscle function in spinal stabilization
2. Contribution of various muscles to spinal stabilization
3. Local Muscle dysfunction in Low back pain
4. Principles of clinical management of deep muscle system for segmental stabilization

II. Manual Therapy Intervention

1. Joint Techniques
 - a) Mckenzie b) Mulligan c) Maitland d) Kaltenborn e) Cyriax
2. Soft tissue techniques
 - a) Butler b) Positional release c) MET d) Myofascial release

III. Stretching

1. Concept & Types
2. Advantages & disadvantages
3. Various techniques
4. Muscle specific technique

IV. Soft Tissue Mobilization

1. General overview of Soft Tissue Mobilization
2. Principles of various techniques of Soft tissue mobilization

V. Chest Mobility

1. Chest mobilization techniques
2. Aims and goals of Breathing exercises.
3. Procedures of Diaphragmatic breathing, segmental breathing, Pursed lip breathing, Glossopharyngeal breathing and respiratory resistance training
4. Relieving episodes of dyspnea.

Essential reading

1. Assessment and treatment of muscle imbalance , The Janda Approach
2. Leon Chatow. Muscle Energy technique (2nd Edition)
3. Micheal Shacklock. Clinical Neurodynamics
4. Peripheral Manipulation Maitland
5. The Lumbar spine mechanical diagnosis and therapy by Mc kenzie

Suggested reading

1. Neural Mobilization David Butler
2. Vertebral manipulation by Maitland
3. Mulligan manual therapy. Mobilization with movement
4. Direct release Myofascial technique by Micheal Stanborough.
5. Freddy M Kaltenborn. Kaltenborn method of Joint examination and treatment.

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Course No.	Title	Total Hours	Hours /week	Credits	IA Marks	SE Marks	Total Marks
MPT 203	Assessment and special issues in orthopedic physiotherapy	120	4	4	20	80	100

Course Description: The course covers topics related to physiotherapy assessment used in managing different disorders affecting the musculoskeletal system in adults. It also covers the assessment and management of paediatric Orthopaedic diseases and disorders. It gives a brief overview of lifestyle and occupational medicine.

Course Objective: The course should enable the student to acquire in-depth knowledge in different physiotherapy assessment used in management of different disorders affecting musculoskeletal systems. It should equip the student to assess and manage paediatric orthopaedic conditions. It should provide the student with a brief overview of lifestyle and occupational medicine.

Course outcome: The student should be able to:

1. To perform a comprehensive and complete Physiotherapy assessment of various orthopaedic patients.
2. To document systematic, meaningful, accurate written records of the patient.
3. To assess and eventually design individualized treatment strategies for the paediatric patients.
4. To develop an overview of the concept of Lifestyle medicine and Occupational medicine.

Section I

- I. **Basic musculoskeletal science and its application**
 1. Normal structure, function and biomechanical behavior of musculoskeletal tissues
 2. Reaction of musculoskeletal tissues to aging, injury, disease and disorders.
- II. **Assessment**
 1. Review of general assessment
 2. Pain assessment
 3. Joint assessment techniques
 4. Special tests for all the joints
 5. Motor assessment
 6. Balance & coordination assessment
 7. Posture & gait assessment
 8. Functional assessment
 9. Disability evaluation
 10. Quality of life assessment
- III. **Pediatric orthopaedic conditions :Physiotherapy examination and management of:**
 - a) Congenital conditions of the upper limb
 - b) Congenital conditions of the lower limb

- c) Congenital conditions of the spine
- IV. **Special issues in orthopaedic physiotherapy**
 - 1. Introduction to lifestyle medicine
 - i. Definition and importance
 - ii. incidence of chronic illness and the contribution of healthy lifestyle to the prevention and treatment of diseases
 - iii. Definition of health and the foundations for good health
 - iv. Physiotherapist's health – self -evaluation, personal goals, the importance of being a role model
- V. **1.Musculoskeletal issues in women**
- 2.Pathobiological mechanisms of pain:**
 - i. Recent advances in pain evaluation and management
 - ii. Psychological components of chronic pain
- 3.Patient compliance**
 - i. Definition and types
 - ii. Factors Affecting Compliance
 - iii. Interventions to improve adherence
 - iv. Patient satisfaction
- 4.Occupational medicine:**
 - i. Ergonomic processes: elements, success factors for implementation, psychosocial works factors.
 - ii. Principles of assessment of industrial fitness and assessment & management of musculoskeletal dysfunctions related to various industries.
 - iii. Ergonomics assist and safety equipment.
 - iv. Ergonomic advice: keyboard, computers, laptop etc.

Essential reading

1. David J Magee. Orthopedic physical Assessment (Fourth edition)
2. Management of common musculoskeletal disorders by Kessler
3. Orthopaedic Examination, Evaluation and Intervention by Dutton
4. Muscle Testing by Hislop Daniel and Wortuingham
5. Karolina M.Szadek (2009). Diagnostic Validity of Criteria for Sacroiliac Joint Pain: A Systematic Review. The Journal of Pain Volume 10, Issue 4, Pages 354-368.
<https://doi.org/10.1016/j.jpain.2008.09.014>
6. W. S. Watson (2000)A reliable technique for the assessment of posture: Assessment criteria for aspects of posture The Journal of sports medicine and physical fitness 40(3):260-70 .
7. Baker R. (2006). Gait analysis methods in rehabilitation. Journal of neuroengineering and rehabilitation, 3, 4. doi:10.1186/1743-0003-3-4

Suggested reading

1. Core Knowledge of orthopaedics
2. Bernhard Reichert. Palpation techniques
3. Muscles testing and function by Kendall

4. Myofascial and pain dysfunction by Travell, Villimans and Wilkins, Baltimore 1983

Course No.	Title	Total Hours	Hours /week	Credits	IA Marks	SE Marks	Total Marks
MPT 204	Physiotherapy in Orthopaedic Trauma	120	4	4	20	80	100

Course Description: The course covers topics related to physiotherapy assessment and management of different orthopaedic trauma conditions.

Course Objective: The course should enable the student to acquire in-depth knowledge and skill in assessment and physiotherapy management of different orthopaedic trauma conditions.

Course Outcome: On completion of the study of this Course the student should be able:

1. To perform a comprehensive and complete Physiotherapy assessment of the following traumatic orthopaedic but not limited to.
2. To formulate a complete physiotherapy treatment plan of the following conditions but not limited to

1. Trauma

1. General physiotherapy management of soft tissue injuries
2. General physiotherapy management of fractures
3. General physiotherapy management of dislocation

2. Physiotherapy management post Conservative and pre and post surgical management of Trauma of Lower limb

1. General consideration of Lower limb trauma
2. Trauma of hip complex & associated bones
3. Trauma of knee complex & associated bones
4. Trauma of foot & ankle complex & associated bone

3. Physiotherapy management post Conservative and pre and post surgical management of Trauma of upper limb

1. General consideration of upper limb trauma
2. Trauma of shoulder complex & associated bones
3. Trauma of elbow & associated bones
4. Trauma of wrist and hand & associated bones

4. Physiotherapy management post Conservative and pre and post surgical management of Trauma of spine

1. General consideration of spinal trauma
2. Trauma of cervical spine and skull
3. Trauma of thoracic spine

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4. Trauma lumbosacral spine
5. **Physiotherapy management post Peripheral nerve injuries**
 1. Upperlimb
 2. Lower limb
 3. Spine

Essential Readings

1. Treatment and rehabilitation fractures by Hoppenfield
2. Apley's system of Orthopaedics and Fractures (Ninth edition) by Louis Solomon.
3. Textbook of Orthopaedics and trauma by Kulkarni
4. Brotzman's Clinical Orthopaedic Rehabilitation (2nd Edition)
5. Krischak G D et al (2009). Physiotherapy after volar plating of wrist Fractures is effective using a Home Exercise program. Arch Phys Med Rehabil. 90(4):537-44 doi: 10.1016/j.apmr.2008.09.575
6. Manske, r. c., & Prohaska, d. (2017). Rehabilitation following medial patellofemoral ligament reconstruction for patellar instability. international journal of sports physical therapy, 12(3), 494–511. pmcid: pmc5455199
7. Menorca, R. M., Fussell, T. S., & Elfar, J. C. (2013). Nerve physiology: mechanisms of injury and recovery. Hand clinics, 29(3), 317–330. doi:10.1016/j.hcl.2013.04.002

Suggested Readings

1. Mercer's Textbook of Orthopaedic & Trauma
2. Orthopaedic rehabilitation by Brokmen
3. Robert C Manske. Post surgical orthopaedic sports rehabilitation knee and shoulder.

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Course No.	Title	Total Hours	Hours /week	Credits	IA Marks	SE Marks	Total Marks
MPT 205P	Orthopedic examination, evaluation and manual therapy	120	4	4	20	80	100

Course Description: The course covers topics related to hands on training in physiotherapy assessment in managing different orthopaedic disease and disorders . It also includes the assessment and management of Paediatric orthopaedic conditions. The covers skill development in various techniques of manual Therapy .

Course Objective: The course should enable the student to acquire in-depth understanding and skill in various assessment techniques used in managing different disorders of the musculoskeletal system . It will equip the students to manage Paediatric orthopaedic cases. The student shall be trained in manual therapy techniques.

Course Outcome: On completion of the study of this Course the student should be able to practice different joint mobilization and soft tissue mobilization techniques and understand and apply principles of topics covered in MPT 202 and MPT203.

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Course No.	Title	Total Hours	Hours /week	Credits	IA Marks	SE Marks	Total Marks
MPT 206P	Evaluative Clinical Practice	120	4	4	20	80	100

Course Description: The course covers topics related to hands on training in physiotherapy assessment and management of different diseases and disorders of musculoskeletal systems . The topics of course are listed in Course code MPT 202 , MPT 203 and MPT 204.

Course Objective: The course should enable the student to acquire in-depth understanding and skill in physiotherapy assessment and management of disease and disorders of musculoskeletal systems.

Course Outcome: The student should be able to interpret and differentiate between various diagnostic tools used for therapeutic plan, take history of the conditions of patients. They should have knowledge of all the physiotherapeutic intervention pertaining to the patient. They should be able to evaluate and plan physiotherapy treatment: its presentation and documentation of all the conditions. The topics and management as discussed in MPT 202, MPT 203 and MPT 204.

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Course No.	Title	Total Hours	Hours /week	Credits	IA Marks	SE Marks	Total Marks
MPT 301	Orthopaedic Medicine and Surgery	60	4	4	20	80	100

Course Description: The course covers topics related to pathophysiology, clinical manifestation, conservative and surgical management of Orthopaedic diseases & disorders.

Course Objective: The course should enable the student to develop a detailed concept about different Orthopaedic diseases & disorders and its management.

Course Outcome: The students should be able to demonstrate adequate knowledge about management of people with Orthopaedic diseases & disorders.

I. Metabolic and endocrine bone diseases

1. Osteoporosis
2. Osteopenia
3. Gout
4. Rickets & osteomalacia
5. Endocrine disorders
6. Hypo & hyperthyroidism

II. Bone & its infections

1. Osteomyelitis
2. Septic arthritis and gonococcal arthritis
3. Congenital syphilis
4. Surgical site infection
5. AIDS
6. Tuberculosis of bone joints
7. Poliomyelitis
8. Leprosy

III. Diseases of joint

1. Tumors of bone & joint
2. Rheumatoid arthritis
3. Osteoarthritis
4. Gouty arthritis
5. Sero-negative spondylo-arthropathies
6. Disorders & disease of shoulder girdle
7. Disorders & disease of elbow
8. Disorders & diseases of wrist
9. Disorders & diseases of hand
10. Disease & disorders of cervical spine
11. Disease & disorder of thoracic spine
12. Disease & disorders of lumbosacral spine
13. Disease & disorders of hip & pelvis
14. Diseases & disorders of knee
15. Disease & disorders of foot and ankle

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Essential Reading :

1. Apley's system of Orthopaedics and Fractures (Ninth edition) by Louis Solomon.
2. Turek's Orthopaedics (6th Edition)
3. Textbook of Orthopaedics and trauma by Kulkarni
4. Campbell's Orthopaedic surgery
5. American Academy of Orthopaedic Surgeons guidelines for the treatment of osteoarthritis of the knee evidence-based guideline 2nd edition. Adopted by Board of Directors May 18, 2013

Suggested Reading:

1. Musculoskeletal Trauma by Blankenbaker
2. Watson Jones fracture, joint & injuries
3. Recent advances in Orthopaedic 2 by Kulkarni

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Course No.	Title	Total Hours	Hours /week	Credits	IA Marks	SE Marks	Total Marks
MPT 302	Management and Pedagogy in Physiotherapy	120	4	4	20	80	100

Course Description: The course covers topics related to physiotherapy ethics, clinic management and theory of teaching.

Course Objective: On completion of the course the student should be able to understand the dynamics of teaching & learning, plan effective teaching sessions in physiotherapy, the basic issues of physiotherapy management & administration and practice as an informed professional on Legal & ethical issues.

Course Outcome: The student should be able to demonstrate adequate knowledge and skill in physiotherapy Ethics, clinic management and learn ways to effectively teach.

SECTION - A

I Administration

1. Functions of management
2. Fundamentals of hospital administration
3. Management Process – Planning, Organization, Direction, Controlling, Decision making
4. Personnel Management – Staffing, Recruitment Selection, Performance appraisal, Collective bargaining, Job Satisfaction.
5. Total Quality management – basics, quality control, quality assurance programme in hospitals and medical audit, International Quality System, Six Sigma approach, Just in Time approach

SECTION - B

II. Hospital management

1. History of hospital Administration, Planning and designing supportive services
2. Planning and designing ancillary and medical services
3. Financial / Management of a hospital
4. Planning and designing administrative services
5. Functions of Physiotherapy associations
6. Role of International health agencies
7. Marketing of a hospital
8. Management of the hospital
9. Planning and developing a hospital (emphasis on physiotherapy department)
10. Administrative running of a hospital
11. Organization of a hospital

SECTION - C

I. Concept of teaching and learning

1. Meaning and scope of Educational Psychology
2. Meaning and Relationship between teaching and learning

3. Learning theories
4. Dynamics of behavior
5. Individual differences

II. Curriculum

1. Meaning and concept
2. Basis of curriculum formulation
3. Framing objectives for curriculum
4. Process of curriculum development and factors involve
5. Evaluation of curriculum

III. Teaching methodology & teaching aids

Methods of teaching- Lecture, Demonstration, Discussion, Seminar, Assignment, Project, Case study

Planning for teaching- Bloom's taxonomy of instructional objectives, Writing instructional objectives IN behavioral terms, Unit planning, Lesson planning

Teaching Aids- Types of teaching aids, Principles of selection, preparation and use of audio-visual aids

IV. Measurement and evaluation

1. Nature of educational measurement: meaning, process, types of tests
2. Construction of an achievement test and its analysis
3. Standardized test-Introduction of some standardized tools, important tests of intelligence, aptitude and personality
4. Continuous and comprehensive evaluation

Essential Readings:

1. Developing a Pedagogy of Teacher education: Understanding teaching and learning about teaching by J. John Laughran
2. Handbook of Technological pedagogical content knowledge (TPCK) for educators (2nd edition) by Mary c. Herring
3. Language, Culture and community in Teacher education by Maria Estela Brisk.
4. Human Resource Management by NK Singh
5. Public Power & Administration by Wilenski, Hale & Iremonger
6. Physical Therapy Administration & Management by Hickik Robert J
7. Medical ethics & consumer protection act by S K Singhal

Suggested Readings:

- 1) Education of the masses: A Quest for Pedagogy by Vetukuri P. S. Raju
- 2) Managerial accounting for hospital by American Hospital Association Hospital: planning, design & management by G D Kunder

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Course No.	Title	Total Hours	Hours /week	Credits	IA Marks	SE Marks	Total Marks
MPT 303	Geriatric, Palliative & Rheumatological Physiotherapy	120	4	4	20	80	100

Course Description: The course covers topics related to physiotherapy assessment and management of strategies in rheumatological, geriatric and palliative care.

Course Objective: The course should enable the student to acquire in-depth knowledge and skill in assessment and physiotherapy management in rheumatological, geriatric and palliative care

Course Outcome: The student should be able to understand and identify the special health needs and treatment strategies related to assessment and management of the various problems associated with the older adult. They should be able to plan and conduct a thorough orthopaedic of geriatric population physiotherapy assessment of the various rheumatological conditions encountered in physiotherapy practise. Student should be able to understand the basic principles of palliative care and apply them to commonly seen palliative care conditions.

Section I

I. Geriatric care

1. Theories of ageing
2. Physiological and anatomical changes associated with ageing
3. Functional assessment of elderly
4. Muscle fatigue and impaired muscle endurance in elderly
5. Postural impairment and its management
6. Exercise consideration for elderly
7. Management of pain in elderly
8. Arthritis
9. Fall & its prevention
10. Perspectives on ageing and disability
11. Management of frail and institutional elderly
12. Health Promotion and Disease Prevention for the gerontological Population

II. Degenerative joint disease

1. Osteoarthritis
2. Degenerative joint diseases of cervical spine
3. Degenerative diseases of thoracic and lumbar spine
4. Neuropathic joint disease (Charcot's disease)

III. Non-articular rheumatism

1. Fibromyalgia
2. Myofascial Pain syndrome
3. Rheumatoid arthritis
 - a) Juvenile rheumatoid arthritis

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- b) Rheumatoid arthritis in extremities
- c) Rheumatoid arthritis of the spine
- d) Seronegative spondylo-arthropathies

IV. Sleep Medicine

1. Acquaintance with basic concepts in sleep medicine, the structure and physiology of sleep
2. Understanding the clinical implications of sleep disturbance in musculoskeletal conditions
3. Physiotherapeutic interventions for improving sleep

Section II

I. Introduction to palliative care

1. Concepts of hospice care, terminal illness/care, end of life care, palliative care
2. The concept of dying with dignity
3. Understanding that goals of treatment will be different
4. Ethics in palliative care
5. Euthanasia and other such issues of terminal illness
6. Bereavement/ Grief and its management
7. Importance of support systems in managing terminal illness
8. Identifying common needs and preferences of patients with terminal illness
9. Skills and their importance in physiotherapy management
10. Role and members of the multidisciplinary team
11. Alternative treatments

II. Pain and Physical symptoms management in palliative care

1. General principles of pain management
2. Various physiotherapeutic methods of pain management
3. Role of opioid, non-opioid and NSAIDs
4. Treating comorbidities
5. Respiratory physiotherapy
6. Exercise principles in PC

III. Physiotherapy in palliative care

1. Introduction to tumors- types, pathology, staging, conservative and surgical management.
2. Conservative, Pre and postoperative assessment and management of common tumors
3. Palliative care in other conditions like AIDS and HIV Positive patients etc

Essential Readings:

1. Geriatric Physical therapy by Andrew A. Guccione
2. Geriatric physical Rehabilitation by Koffmann Moron
3. Rheumatology by Hammond
4. European League against Rheumatism EULAR recommendations for physical activity in people with inflammatory arthritis and osteoarthritis, <http://dx.doi.org/10.1136/annrheumdis-2018-213585>.

5. Linda Fernandes, EULAR recommendations for the non-pharmacological core management of hip and knee osteoarthritis. Ann Rheum Dis 2013;72:1125-1135. doi:10.1136/annrheumdis-2012-202745
6. Micheal Bancroft et al. (2003). Physiotherapy in Cancer Rehabilitation: A theoretical approach Physiotherapy Volume 89, Issue 12, Pages 729-733 [https://doi.org/10.1016/S0031-9406\(05\)60498-1](https://doi.org/10.1016/S0031-9406(05)60498-1)

Suggested Readings:

1. Pathy's Principles and practice of Geriatric medicine (5th edition)
2. Textbook of Palliative care by Rodrick Duncan
3. Oxford handbook of Palliative care by Max Watson
4. Textbook of palliative medicine and supportive care by Irene Higginson

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Course No.	Title	Total Hours	Hours /week	Credits	IA Marks	SE Marks	Total Marks
MPT 304P	Orthopaedic Medicine and Surgery	120	4	4	20	80	100

Course Description: The course covers topics related to training on management of people with orthopaedic conditions. The topic is listed in MPT 301.

Course Objective: The course should enable the student to acquire in-depth knowledge about management of people with diseases and disorders of orthopaedics in clinical settings.

Course Outcome: The student should be able to demonstrate adequate knowledge and skill in on management of people with musculoskeletal system disorders in clinical

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Course No.	Title	Total Hours	Hours /week	Credits	IA Marks	SE Marks	Total Marks
MPT 305P	Practical – IV Evaluative Clinical practice	120	4	4	20	80	100

Course Description: The course covers topics related to hands on training in physiotherapy assessment and management of different diseases and disorders of musculoskeletal systems. The topics of course are listed in Course code MPT 301 , MPT 303 and MPT 304.

Course Objective: The course should enable the student to acquire in-depth understanding and skill in physiotherapy assessment and management of disease and disorders of musculoskeletal Systems.

Course Outcome: The student should be able to interpret and differentiate between various diagnostic tools used for therapeutic plan, take history of the conditions of patients. They should have knowledge of all the physiotherapeutic intervention pertaining to the patient. They should be able to evaluate and plan physiotherapy treatment: its presentation and documentation of all the conditions. The topics and management as discussed in MPT 301, MPT 303, MPT 304

Course No.	Title	Total Hours	Hours /week	Credits	IA Marks	SE Marks	Total Marks
MPT 401	Professional ethics in physiotherapy	120	4	4	20	80	100

1. Concept of Morality, Ethics and Legality.
2. Rules of Professional conduct, Medico Legal and Moral Implications.
3. Communication skills, Client interest and Satisfaction.
4. Interdisciplinary Relation, Co-partnership, Mutual Respect, Confidence and Communication, Responsibilities of the Physiotherapists, Status of Physiotherapist in Health Care.
5. Role of Professional in Socio Personal and Socio Economical context.
6. Need of Council Act for regulation of Professional Practice.
7. Self- Regulatory role of Professional Association.
8. Rules of Professional Conduct.
9. Role of WCPT, Various branches and special interest groups of WCPT.
10. Indian association of physiotherapists: rules, regulations, framework, aims, and objectives.
11. Physiotherapy and law. Medico legal aspects of physiotherapy, liability, negligence, malpractice, licensure, workman's compensation.

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Course No.	Title	Total Hours	Hours /week	Credits	IA Marks	SE Marks	Total Marks
MPT 402	Dissertation	120	4	4	20	80	100

Course Description: The course covers carry out an independent research, which will involve conducting of the work as per the documented methodology, data collection, statistical analysis, dissertation writing. The work will build on the knowledge acquired through study of research methodology and biostatistics.

Course Objective: The course should enable the student to acquire in-depth knowledge and skill in independent dissertation writing.

Course Outcome: Students should be able to develop a research project and conduct the dissertation writing independently in physiotherapy.

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