

MPT: Syllabus Revision in 2019-20.

S. No	Course Code	Session 2018-19	Session 2019-20	Remark Syllabus Change/ new course
1	MPT101	<p><u>MPT IST YEAR</u> <u>Basic Medical Science</u> <u>Anatomy and Applied Anatomy:</u> UNIT-I A review of organization and regulation of motor system. i. Types of movement and factors affecting contact and range of motion at synovial joints ii. Skeletal muscle tissue iii. Muscle metabolism iv. Contraction and relaxation of muscle v. Control of muscle tension UNIT-II A review of control system of body (Motor and sensory). i. Structure function and organization of nervous tissue ii. Electrical signals in neurons and its transmission iii. Regeneration and repair of nervous tissue iv. Functional organization of cerebral cortex v. Sensory motor and integrative system (Sensation, somatic sensation, Sensory pathways, motor pathways). vi. Reflexes and reflex arcs UNIT-III Physiology & Applied Physiology: i. Structure and function of cardio vascular system & disorders. ii. Structure and function of respiratory system & disorders. iii. Structure and function of endocrinal system & disorders. iv. Structure and Function of Musculoskeletal System & disorders.</p>	<p><u>Basic Medical Science</u> UNIT 1- A reviews of organization and regulation of motor system. Types of movement and factors affecting contact and range of motion at synovial joints Skeletal muscle tissue Muscle metabolism Contraction and relaxation of muscle Control of muscle tension UNIT 2- A review of control system of body (Motor and sensory). Structure function and organization of nervous tissue Electrical signals in neurons and its transmission Regeneration and repair of nervous tissue Functional organization of cerebral cortex Sensory motor and integrative system (Sensation, somatic sensation, Sensory pathways, motor pathways). Reflexes and reflex arcs UNIT 3-Structure and function of cardio vascular system & respiratory system along with their disorders. UNIT 4-Structure and function of endocrinal system & disorders. UNIT 5-Structure and function of Musculoskeletal System & disorders Structure and Function of Nervous System & disorders.</p>	No change
2	MPT102 (A)	<p><u>BIOMECHANICS</u> <u>UNIT-I</u> <u>Concepts of Biomechanics:</u> I. Introduction to Kinesiology and Biomechanics. II. Principle of Biomechanics III. Nature and importance of Biomechanics in Physiotherapy. IV. Advanced Biomechanics and kinesiology I. Introduction to biomechanical analysis of humane motion. UNIT II. Analytical tools and techniques – a) Isokinetic Dynamometer, b) Kinesiological EMG, c) Electronic Goniometer,</p>	<p><u>BIOMECHANICS</u> UNIT1 – Concepts of Biomechanics: Introduction to Kinesiology and Biomechanics. Principle of Biomechanics Nature and importance of Biomechanics in Physiotherapy. Advanced Biomechanics and kinesiology Introduction to biomechanical analysis of humane motion. Analytical tools and techniques – Isokinetic Dynamometer, Kinesiological EMG, Electronic Goniometer,</p>	Syllabus revision

		<p>d) Force Platform, e) Videography. V. Ergonomic approach to lifting and handling, workspace and environment. VI. Patient positioning, body mechanics and Transfer techniques. UNIT-III Applied Biomechanics: I. Upper Extremity: Shoulder and Shoulder girdle, Elbow joint, Wrist joint and Hand. II. Lower Extremity: Pelvic Girdle, Hip joint, Knee joint, Ankle & Foot UNIT IV. Spine</p>	<p>Force Platform, Videography. Ergonomic approach to lifting and handling, workspace and environment. Patient positioning, body mechanics and Transfer techniques. UNIT 2- Upper Extremity: Shoulder and Shoulder girdle, Elbow joint, Wrist joint and Hand. UNIT 3- Lower Extremity: Pelvic Girdle, Hip joint, Knee joint, Ankle & Foot. UNIT 4- Spine UNIT 5-Gait-Gait Analysis: Kinetic & Kinematic Analysis. Pathological Gait: Kinetic & Kinematic Analysis</p>	
3	MPT 102(B)	<p>LASER UNIT I :INTERFERENCE OF LIGHT i. Review of basic ideas of interference ii. Interference due to transmitted light iii. Principle of Interference iv. Theory of interference-intensity distribution v. Conditions for interference UNIT II:COHERENCE i. Principles of coherence, types of coherence ii. Coherent wave- optical path and phase change iii. Scope of coherence iv. Spatial coherence in laser v. Difference between collimated and coherent light UNIT III:DIFFRACTION i. Properties of diffraction ii. Effects of diffraction iii. Fresnel Diffraction iv. Huygens- Fresnel theory, zone plate v. Difference between zone plate and convex lens, comparison between interference and diffraction vi. Diffraction pattern due to a straight edge vii. Diffraction pattern due to a single slit UNIT IV: i. Explain the function of techniques for characterising ultra-short laser pulses, e.g. autocorrelation, SPIDER, and FROG ii. Systematically describe the construction of, and principles for modern high-power lasers UNIT V : LASER AND FIBRE OPTICS i. Absorption and emission of light ii. Absorption-spontaneous emission and stimulated emission iii. Einstein relations iv. Population inversion, Active medium v. Three level and Four level Laser systems</p>	<p>LASER UNIT I :INTERFERENCE OF LIGHT i. Review of basic ideas of interference ii. Interference due to transmitted light iii. Principle of Interference iv. Theory of interference-intensity distribution v. Conditions for interference UNIT II:COHERENCE i. Principles of coherence, types of coherence ii. Coherent wave- optical path and phase change iii. Scope of coherence iv. Spatial coherence in laser v. Difference between collimated and coherent light UNIT III:DIFFRACTION i. Properties of diffraction ii. Effects of diffraction iii. Fresnel Diffraction iv. Huygens- Fresnel theory, zone plate v. Difference between zone plate and convex lens, comparison between interference and diffraction vi. Diffraction pattern due to a straight edge vii. Diffraction pattern due to a single slit UNIT IV: i. Explain the function of techniques for characterising ultra-short laser pulses, e.g. autocorrelation, SPIDER, and FROG ii. Systematically describe the construction of, and principles for modern high-power lasers iii. Demonstrate in-depth understanding of high-harmonic generation and attosecond pulses iv. Describe in detail the properties of synchrotrons, and free electron lasers UNIT V : LASER AND FIBRE OPTICS i. Absorption and emission of light ii. Absorption-spontaneous emission and stimulated emission iii. Einstein relations iv. Population inversion, Active medium v. Three level and Four level Laser systems vi. Semiconductor Laser, Laser beam Characteristics vii. Applications of Laser, Holography (qualitative study only)</p>	Syllabus revision

4	MPT 103	<p>Physiotherapy methods-I UNIT-I I. Principle of therapeutic exercises II. Definition, details of effects and uses of following exercises. I. Stretching II. Balance and coordination exercises III. Factors affecting the joint range of motion prevention of stiffness, methods of Joint mobilization. IV. Biophysics of contractile and non contractile tissues, Response to mechanical loading IV. Clinical reasoning and differential clinical diagnosis based on various approaches such as Maitland, Kaltenborne, Cyriax, Mulligan, Meckenzie etc</p> <p>UNIT-II I. Principles and application of neuromuscular facilitation techniques including PNF II. Principles of different soft tissue mobilizations like Myofacial Techniques, III. Neural Tissue Mobilization IV. Muscle Energy Technique V. Massage i. Historical development. ii. Definition and classification of massage techniques iii. Physiological effects of massage. iv. Description of the techniques of the classical massage. v. Therapeutic applications and contraindications of massage. VI. Aquatic therapy</p> <p>Physiotherapy Methods I UNIT-I I. Electro diagnosis: introduction to methods of electro diagnosis SD CURVE II. Electro myography : technique of EMG , interpretation of normal and abnormal responses III. Nerve conduction studies: MNCV, SNCV, variables affecting nerve conduction, measurement of NCV of nerves of upper limb and lower limb, interpretations of normal and abnormal responses. IV. potentials, H-reflex, P wave, Evoked repetitive nerve stimulation, VEP, BAEP, SSEP. V. Review of Principles underlying the application of following modalities with reference to their Production, biophysical and therapeutic effects, indications and contraindications and the specific uses of: i. Superficial heating modalities ii. Deep heating modalities</p>	<p>Physiotherapy method UNIT-I I. Principle of therapeutic exercises II. Definition, details of effects and uses of following exercises. a. Dynamic Exercises b. Plyometric Exercises c. Isokinetic Exercises d. Kinetic chain exercises e. PRE III. Stretching IV. Balance and coordination exercises V. Factors affecting the joint range of motion prevention of stiffness, methods of Joint mobilization.</p> <p>UNIT-II I. Principles and application of neuromuscular facilitation techniques including PNF II. Principles of different soft tissue mobilizations like Myofacial Techniques, III. Neural Tissue Mobilization IV. Muscle Energy Technique V. Aquatic therapy</p> <p>UNIT-III Massage I. Historical development. II. Definition and classification of massage techniques III. Physiological effects of massage. IV. Description of the techniques of the classical massage. V. Physiological basis of massage, underwater massage, mechanical devices of massage VI. Therapeutic applications and contraindications of massage.</p> <p>UNIT-IV I. Electro diagnosis: introduction to methods of electro diagnosis SD CURVE II. Electro myography : technique of EMG, interpretation of normal and abnormal responses III. Nerve conduction studies: MNCV, SNCV, variables affecting nerve conduction, measurement of NCV of nerves of upper limb and lower limb, interpretations of normal and abnormal responses. IV. Evoked potentials, H-reflex, P wave, repetitive nerve stimulation, VEP, BAEP, SSEP. V. Review of Principles underlying the application of following modalities with reference to their Production, biophysical and therapeutic effects, indications and contraindications and the specific uses of: i. Superficial heating modalities</p>	Syllabus revision
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		iii. Ultrasound iv. Cryotherapy UNIT-II I. Review of Principles underlying the application of following modalities with reference to their Production, biophysical and therapeutic effects, indications and contraindications and the specific uses of Physiotherapy <ol style="list-style-type: none"> i. Low Frequency Current: Diadynamic Current, Iontophoresis ii. High Voltage, Pulsed Galvanic Stimulation, TENS, IFT, Russian Currents. LASER II. Advanced Electro Therapeutics in Tissue healing, Wound care, Management of Scars keloids, Muscle Plasticity & Integumentary Conditions. III. BIO-FEED BACK	ii. Deep heating modalities iii. Ultrasound iv. Cryotherapy UNIT-V I. Review of Principles underlying the application of following modalities with reference to their Production, biophysical and therapeutic effects, indications and contraindications and the specific uses of Physiotherapy II. TENS, IFT, Russian Currents. LASER III. Advanced Electro Therapeutics in Tissue healing, Wound care, Management of Scars keloids, Muscle Plasticity & Integumentary Conditions. IV. BIO-FEED BACK V. Clinical reasoning and differential clinical diagnosis based on various approaches such as Maitland, Kaltenborne, Cyriax, Mulligan, Meckenzie etc	
5	MPT 104	Research Methodology and Biostatistics UNIT-I Basics concepts: I. Research –Introduction, scope, characteristics, types, clinical trials and ethics. II. Research methods—various methods. III. Census and survey methods of investigation. IV. Hypothesis—Advantages and types. V. Sample - Introduction and types of sampling. UNIT II: Methods of Data Collection i. Schedule –Introduction, types, procedure of forming schedule and limitations. ii. Questionnaire – Introduction, types, reliability and limitations. iii. Interview -- Introduction, types, technique and limitations. iv. Observation – Introduction, organization of field observations and limitations. v. Preparation of report – Introduction, developing outline, writing, references and bibliography. UNIT-III Concepts of Biostatistics: I. Biostatistics –Introduction, origin & development, scope, functions and limitations II. Presentation of data—Classification, tabulation, diagrammatic and graphical presentation of data. III. Central tendencies – Mean, Mode and Median IV. Measures of dispersion – Standard deviation and standard errors. V. Skewness and kurtosis. VI. Odd Ratios, Receiver Operating Curve (ROC) VI. Probability	Research Methodology and Biostatistics UNIT-1 I. Research –Introduction, scope, characteristics, types, clinical trials and ethics. II. Research methods—various methods. III. Census and survey methods of investigation. IV. Hypothesis—Advantages and types. V. Sample - Introduction and types of sampling. UNIT-II Methods of Data Collection I. Schedule –Introduction, types, procedure of forming schedule and limitations. II. Questionnaire – Introduction, types, reliability and limitations. III. Interview -- Introduction, types, technique and limitations. IV. Observation – Introduction, organization of field observations and limitations. V. Preparation of report – Introduction, developing outline, writing, references and bibliography. UNIT-III I. Biostatistics –Introduction, origin & development, scope, functions and limitations II. Presentation of data—Classification, tabulation, diagrammatic and graphical presentation of data. III. Central tendencies – Mean, Mode and Median IV. Measures of dispersion – Standard deviation and standard errors. V. Skewness and kurtosis. VI. Odd Ratios, Receiver Operating Curve (ROC) VII. Probability UNIT-IV	No change

		<p>UNIT IV: Statistical Tools-</p> <p>i. Correlation and regression</p> <p>ii. Parametric test</p> <p>iii. Non-parametric tests</p>	<p>Statistical Tools-</p> <p>I. Correlation and regression</p> <p>II. Parametric tests</p> <p>III. Non-parametric tests</p>	
6	MPT 105	<p align="center">Basics of Exercise Physiology & Nutrition</p> <p>UNIT-I</p> <p>I. Bioenergetics of exercise : High energy phosphates, Anaerobic and aerobic ATP synthesis, Bioenergetics Control, exercise intensity & substrate utilization, protecting CHO stores, muscle adaptation to endurance training, processes that potentially limit the rate of fat oxidation, regulation of substrate utilization, training - induced increase in FFA oxidization:</p> <p>II. Basal metabolic and resting metabolic rates and factors affecting them, Classification of Physical Activities by energy expenditure,. Concept of MET , measurement of energy cost of exercise.</p> <p>UNIT II. Nutrition</p> <p>i. metabolism of Carbohydrate , fats and proteins , vitamin, mineral and water</p> <p>UNIT-III</p> <p>I. Respiratory responses to exercise: Ventilation at Rest and during Exercise., Ventilation and the Anaerobic Threshold, static and dynamic lung volume . Gas diffusion, Oxygen and carbon dioxide transport second wind , stich by side control of pulmonary ventilation during exercise adaptive changes in the respiratory systems due to regular physical activities .</p> <p>II. Cardiovascular responses to exercise- Cardiovascular system and exercise, acute vascular effects of exercise , Circulatory responses to various types of exercise regulation of cardiovascular system during exercise , Pattern of redistribution of blood flow during exercise, adaptive responses of cardiovascular system to aerobic and anaerobic training. Athlete heart</p> <p>UNIT1V:. Exercise and Acid Base Balance:</p>	<p align="center">Basics of Exercise Physiology & Nutrition</p> <p>UNIT 1-Bioenergetics of exercise : High energy phosphates, Anaerobic and aerobic ATP synthesis, Bioenergetics Control, exercise intensity & substrate utilization, protecting CHO stores, muscle adaptation to endurance training, processes that potentially limit the rate of fat oxidation, regulation of substrate utilization, training - induced increase in FFA oxidization, Basal metabolic and resting metabolic rates and factors affecting them, Classification of Physical Activities by energy expenditure,. Concept of MET, measurement of energy cost of exercise</p> <p>UNIT II- Nutrition</p> <p>metabolism of Carbohydrate, fats and proteins, vitamin, mineral and water optimum nutrition for exercise, nutrition for physical performance, pre game meal carbohydrate loading, food for various athletic events, fluid and energy replacement in prolonged exercise</p> <p>Nutrition in exercise</p> <p>i. optimum nutrition for exercise , nutrition for physical performance , pre game meal</p> <p>ii. carbohydrate loading , food for various athletic events , fluid and energy replacement in prolonged exercise</p> <p>UNIT III- (i)Respiratory responses to exercise: Ventilation at Rest and during Exercise., Ventilation and the Anaerobic Threshold, static and dynamic lung volume . Gas diffusion, Oxygen and carbon dioxide transport second wind, stich by side control of pulmonary ventilation during exercise adaptive changes in the respiratory systems due to regular physical activities .</p> <p>ii) Cardiovascular responses to exercise- Cardiovascular system and exercise, acute vascular effects of exercise, Circulatory responses to various types of exercise regulation of cardiovascular system during</p>	<p>Syllabus revision</p>

		<p>Acid and Bases, Buffers, pH, Respiratory Regulation of pH, Alkali Reserve, The kidneys and Acid base balance, Alkalosis and Acidosis, Acid base balance following heavy exercise.</p> <p>UNIT V:. Hormonal responses to exercise with respect to</p> <p>Growth Hormone (GH), Thyroid and Parathroid Hormones. Anti diuretic Hormone (ADH) and Aldosterone, Insulin and Glucagons, The catecholamine; epinephrine and norepinephrine. The sex hormones. The glucocorticoids (Cortisol) and AdrenoCorticotropic Hormones (ACTH). Prostaglandins and Endorphins:</p>	<p>exercise, Pattern of redistribution of blood flow during exercise, adaptive responses of cardiovascular system to aerobic and anaerobic training. Athlete heart</p> <p>UNIT IV- Exercise and Acid Base Balance:</p> <p>Acid and Bases, Buffers, pH, Respiratory Regulation of pH, Alkali Reserve, The kidneys and Acid base balance, Alkalosis and Acidosis, Acid base balance following heavy exercise.</p> <p>UNIT V- Hormonal responses to exercise with respect to</p> <p>Growth Hormone (GH), Thyroid and Parathroid Hormones. Anti diuretic Hormone (ADH) and Aldosterone, Insulin and Glucagons, The catecholamine; epinephrine and nor epinephrine. The sex hormones. The glucocorticoids (Cortisol) and AdrenoCorticotropic Hormones (ACTH). Prostaglandins and Endorphins.</p>	
7	MPT 106 (A)	<p>ASSESSMENT AND EVALUATION IN NEURO-PHYSIOTHERAPY &PHYSIOTHERAPY IN PEDIATRIC NEUROLOGY</p> <p>UNIT-I</p> <p><u>Physical Therapy Assessment Procedures Used In Neurological Conditions:</u></p> <p>I. Neurological assessment, evaluation and correlation of findings with neurological dysfunction</p> <p>a) History taking and examination of neurologically ill patient</p> <p>b) Higher cerebral function examination,</p> <p>c) Cognitive and perceptual assessment,</p> <p>d) Cranial nerves examination</p> <p>e) Motor System Assessment - Tone, voluntary movement control & abnormal involuntary movement,</p> <p>f) Assessment of reflex integrity</p> <p>g) Assessment of gait (kinetic & kinematic)</p> <p>h) Sensory system assessment and examination</p> <p>II. Balance and Co-ordination</p> <p>Assessment evaluation of following and correlation of findings with neurological dysfunction</p> <p>a) Balance, equilibrium and Coordination assessment.</p> <p>b) Assessment of Autonomic nervous system function.</p> <p>c) Vestibular Examination</p> <p>d) Assessment of unconscious patient.</p> <p>UNIT-II</p> <p><u>Neurological Assessment scales and measurement tools</u></p> <p>I. Functional Assessment scales: Barthel</p>	<p>ASSESSMENT AND EVALUATION IN NEURO-PHYSIOTHERAPY &PHYSIOTHERAPY IN PEDIATRIC NEUROLOGY</p> <p>UNIT 1– Physical Therapy Assessment Procedures Used In Neurological Conditions:</p> <p>Neurological assessment, evaluation and correlation of findings with neurological dysfunction</p> <p>History taking and examination of neurologically ill patient</p> <p>Higher cerebral function examination,</p> <p>Cognitive and perceptual assessment,</p> <p>Cranial nerves examination</p> <p>Motor System Assessment - Tone, voluntary movement control & abnormal involuntary movement,</p> <p>Assessment of reflex integrity</p> <p>Assessment of gait (kinetic & kinematic)</p> <p>Sensory system assessment and examination</p> <p>Balance and Co-ordination</p> <p>Assessment evaluation of following and correlation of findings with neurological dysfunction</p> <p>Balance, equilibrium and Coordination assessment.</p> <p>Assessment of Autonomic nervous system function.</p> <p>Vestibular Examination</p> <p>Assessment of unconscious patient.</p> <p>UNIT II- Neurological Assessment scales and measurement tools</p> <p>Functional Assessment scales: Barthel index, Katz Index of ADL, FIM Scale, Sickness Impact Profile, Outcome & Assessment Information Set (OASIS).IADL.</p> <p>Functional balance and coordination scales: functional</p>	Syllabus revision

	<p>index, Katz Index of ADL, FIM Scale, Sickness Impact Profile, Outcome & Assessment Information Set (OASIS).IADL.</p> <p>II. Functional balance and coordination scales: functional reach test, Timed up and go test, Get up and go test, Berg balance Scale, CTSIB, Scales used in ataxia</p> <p>II. Rehabilitation Outcome measure scales: Quality of life Measures, Scales used in Assessment of elderly.</p> <p>UNIT III:Advanced Neurological Assessment Procedures:</p> <p>i. Disease Specific Measurements scales and tools: Clinical Stroke scales, Scales used in spinal cord injury, Scales for the assessment of movement disorders, Multiple sclerosis, Scales for assessment of Brain injury And Cognitive scales,</p> <p>ii. Laboratory Examination related to Neurological Disorders: Lumbar puncture & CSF Analysis</p> <p>iii. Neuro-dynamic tests.</p> <p>a) Slump test b) SLR c) ULTT</p> <p>PHYSIOTHERAPY IN PAEDIATRIC NEUROLOGY</p> <p>UNIT-IV</p> <p>I. Pre & post-natal Development sequence of normal child.</p> <p>II. Developmental milestones, Neonatal reflexes, various periods of growth,</p> <p>III. General assessment of child</p> <p>IV. Treatment techniques: NDT approach, Roods approach, Vojta techniques,</p> <p>V. Early identification and intervention Important Screening Tests.</p> <p>i. Developmental Screening Tests.</p> <p>ii. Tests of motor function.</p> <p>VI. Nutrition and Immunization: Normal nutritional requirements of a child, Prevention of some nutritional disorders, Nutritional deficiency diseases, Immunization.</p> <p>VII. High risk infants, risk factors, neonatal assessment, developmental intervention, ICU, NICU & IMC Care.</p> <p>UNIT-V</p> <p>I. Cerebral Palsy: types, etiology, clinical features, management and rehabilitation of various types of cerebral palsies various approaches used in C.P.</p> <p>II. Physiotherapy in Neurological affection</p>	<p>reach test, Timed up and go test, Get up and go test, Berg balance Scale, CTSIB, Scales used in ataxia</p> <p>Rehabilitation Outcome measure scales: Quality of life Measures, Scales used in Assessment of elderly.</p> <p>UNIT III :Advanced Neurological Assessment Procedures:</p> <p>Disease Specific Measurements scales and tools: Clinical Stroke scales, Scales used in spinal cord injury, Scales for the assessment of movement disorders, Multiple sclerosis, Scales for assessment of Brain injury And Cognitive scales,</p> <p>Laboratory Examination related to Neurological Disorders: Lumbar puncture & CSF Analysis</p> <p>Neuro-dynamic tests.</p> <p>Slump test</p> <p>SLR</p> <p>ULTT</p> <p>UNIT-IV:PHYSIOTHERAPY IN PAEDIATRIC NEUROLOGY</p> <p>Pre & post-natal Development sequence of normal child.</p> <p>Developmental milestones, Neonatal reflexes, various periods of growth,</p> <p>General assessment of child</p> <p>Treatment techniques: NDT approach, Roods approach, Vojta techniques,</p> <p>Early identification and intervention Important Screening Tests.</p> <p>Developmental Screening Tests.</p> <p>Tests of motor function.</p> <p>Nutrition and Immunization: Normal nutritional requirements of a child,</p> <p>High risk infants, risk factors, neonatal assessment, developmental intervention, ICU, NICU & IMC Care.</p> <p>UNIT-V</p> <p>Cerebral Palsy: types, etiology, clinical features, management and rehabilitation of various types of cerebral palsies various approaches used in C.P.</p> <p>Physiotherapy in Neurological affection of childhood: poliomyelitis, spina bifida, hydrocephalus, meningitis, encephalitis, inflammatory disorders of brain and spinal cord, birth injuries of brachial plexus</p> <p>Physiotherapy in Muscular Disorders:</p> <p>a. myopathies of childhood.</p> <p>b. types of muscular dystrophies,</p> <p>c. floppy muscular dystrophy;</p> <p>Role of Physiotherapy in Genetic Disorders:</p> <p>a. Down syndrome,</p> <p>b. Fragile X Syndrome,</p> <p>c. Rett's Syndrome,</p> <p>d. Spinal Muscular Atrophy</p>	
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		<p>of childhood: poliomyelitis, spina bifida, hydrocephalus, meningitis, encephalitis, inflammatory disorders of brain and spinal cord, birth injuries of brachial plexus</p> <p>I. Physiotherapy in Muscular Disorders:</p> <ol style="list-style-type: none"> myopathies of childhood, types of muscular dystrophies, floppy muscular dystrophy; 		
8	MPT 106(B)	<p>ASSESSMENT AND EVALUATION IN MUSCULOSKELETAL PHYSIOTHERAPY &PHYSIOTHERAPY IN NON-TRAUMATIC ORTHOPAEDIC CONDITIONS</p> <p><u>UNIT-I</u></p> <p><u>Introduction of Assessment Techniques</u></p> <p>I. Physiotherapeutic assessment, evaluation and clinical reasoning in orthopedics</p> <p>Introduction to various concepts of physical assessment</p> <ol style="list-style-type: none"> Maitland James Cyriax <p>II. Overview of various investigatory procedures (Hematology and Serology, imaging techniques, arthroscopy, BMD)</p> <p>III. Assessment of Amputee</p> <p>IV. Examination and assessment of geriatric patient</p> <p>V. Functional Assessment</p> <p>UNIT II-Examination of Upper Extremity</p> <ol style="list-style-type: none"> Shoulder Elbow Forearm, Wrist and Hand <p><u>UNIT- III</u></p> <p><u>Examination of lower extremity & Examination of Spine</u></p> <ol style="list-style-type: none"> Pelvis Hip Knee Lower Leg, Ankle and Foot Head and Face Cervical spine Thoracic Spine Lumbar Spine <p><u>UNIT-IV</u></p> <p>General Orthopedics</p> <ol style="list-style-type: none"> Infections in bones and joints:- Acute, Chronic Rheumatic disorders Generalized affections of bone and joints (metabolic & endocrinal) Development disorders. (cartilaginous dysplasis, bony dysplasis & chromosomal abnormalities etc.) Congenital disorders Degenerative disorders 	<p>ASSESSMENT AND EVALUATION IN MUSCULOSKELETAL PHYSIOTHERAPY &PHYSIOTHERAPY IN NON-TRAUMATIC ORTHOPAEDIC CONDITIONS</p> <p>UNIT 1—Introduction of Assessment Techniques</p> <p>Physiotherapeutic assessment, evaluation and clinical reasoning in orthopedics</p> <p>Introduction to various concepts of physical assessment</p> <p>Maitland</p> <p>James</p> <p>Cyriax</p> <p>Overview of various investigatory procedures (Hematology and Serology, imaging techniques, arthroscopy, BMD)</p> <p>Assessment of Amputee</p> <p>Examination and assessment of geriatric patient</p> <p>Functional Assessment</p> <p>UNIT II-Examination of Upper Extremity</p> <p>Shoulder</p> <p>Elbow</p> <p>Forearm,</p> <p>Wrist and Hand</p> <p>UNIT III- Examination of lower extremity & Examination of Spine</p> <p>Pelvis</p> <p>Hip</p> <p>Knee</p> <p>Lower Leg, Ankle and Foot</p> <p>Head and Face</p> <p>Cervical spine</p> <p>Thoracic Spine</p> <p>Lumbar Spine</p> <p>UNIT IV-General Orthopedics</p> <p>Infections in bones and joints:- Acute, Chronic</p> <p>Rheumatic disorders</p> <p>Generalized affections of bone and joints (metabolic & endocrinal)</p> <p>Development disorders. (cartilaginous dysplasis, bony dysplasis& chromosomal abnormalities etc.)</p> <p>Congenital disorders</p>	Syllabus revision

		<p>vii. Tumors of bones I. Osteonecrosis and Osteochondritis II. Bony & Soft Tissue disorders of:- i. Shoulder and arm ii. Elbow and forearm iii. Wrist and hand UNIT-V I. Bony & Soft Tissue disorders of: i. Hip and thigh ii. Knee and leg iii. Ankle and foot II. Vascular and Neuromuscular Disorders. i. Thoracic outlet/ inlet syndrome</p>	<p>Degenerative disorders Tumors of bones Osteonecrosis and Osteochondritis Bony & Soft Tissue disorders of:- Shoulder and arm Elbow and forearm Wrist and hand UNIT V Bony & Soft Tissue disorders of: Hip and thigh Knee and leg Ankle and foot Vascular and Neuromuscular Disorders. Thoracic outlet/ inlet syndrome Compartment syndrome. Neuropathies, Neuralgia, Neuritis Reflex Sympathetic Dystrophy Poliomyelitis</p>	
9	MPT 106 (C)	<p>Sports Traumatology I & Sports Traumatology 2 Sports Traumatology I UNIT-I <u>Assessment and evaluation in Sports Injuries</u></p> <p>I. Importance of assessment & evaluation II. Outlines of principles and Methods of evaluation III. Clinical Examination , Investigative Procedures and documentation of sports injuries IV. Causes & Mechanism of Sports Injuries V. Prevention of Sports injuries VI. Principle of management of sports injuries VII. Evaluation of Physical Fitness i. Assessment of components of physical fitness including functional tests: muscle strength, flexibility, agility, balance, co-ordination, sensory deficits, cardio-pulmonary endurance ii. Sports-Specific evaluation and criteria for return to sport</p> <p>UNIT-II <u>Lower Limb & Upper limb Examination</u></p> <p>I. Examination of lower limb II. Common acute and overuse injuries of lower Extremity(with respect to causation, prevention and management) of: i. Pelvis</p>	<p>Sports Traumatology I & Sports Traumatology 2 Sports Traumatology I UNIT 1-Assessment and evaluation in Sports Injuries Importance of assessment & evaluation Outlines of principles and Methods of evaluation Clinical Examination, Investigative Procedures and documentation of sports injuries Causes & Mechanism of Sports Injuries Prevention of Sports injuries Principle of management of sports injuries Evaluation of Physical Fitness Assessment of components of physical fitness including functional tests: muscle strength, flexibility, agility, balance, co-ordination, sensory deficits, cardio-pulmonary endurance Sports-Specific evaluation and criteria for return to sport UNIT II - Lower Limb & Upper limb Examination Examination of lower limb Common acute and overuse injuries of lower Extremity(with respect to causation, prevention and management) of: Pelvis Hip Thigh Knee Leg Ankle and Foot Examination of Upper Extremity Common acute and overuse injuries of upper extremities (with respect to causation, prevention and</p>	Syllabus revision

		<ul style="list-style-type: none"> ii. Hip iii. Thigh iv. Knee v. Leg vi. Ankle and Foot <p>III. Examination of Upper Extremity</p> <p>IV. Common acute and overuse injuries of upper extremities (with respect to causation, prevention and management) of:</p> <ul style="list-style-type: none"> i. Shoulder girdle ii. Shoulder iii. Arm iv. Elbow &Forearm v. Wrist and hand. <p>Sports Traumatology 2</p> <p>UNIT-III</p> <p>I. Assessment of vertebral column:</p> <ul style="list-style-type: none"> 1. Cervical 2. Thoracic 3. Lumboscaral including Tests of Neural Tension. <p>II. Common sports injuries of spine with respect to causation, prevention and management</p> <p>III. Sporting emergencies & first aid</p> <ul style="list-style-type: none"> 1. Head and neck 2. Face 3. Abdominal injuries <p>IV. Cardio pulmonary Resuscitation; Shock management, Internal and External</p> <p>Bleeding, Splinting, Stretcher use-Handling and transfer</p> <p>V. Management of Cardiac Arrest, acute asthma, epilepsy, drowning, burn</p> <p>VI. Medical management of Mass Participation</p> <p>VII. Heat stroke and Heat illness.</p> <p>UNIT-IV</p> <ul style="list-style-type: none"> I. Kinanthropometric evaluation II. Kinesiological EMG 	<p>management) of:</p> <p>Shoulder girdle</p> <p>Shoulder</p> <p>Arm</p> <p>Elbow &Forearm</p> <p>Wrist and hand.</p> <p>Sports Traumatology 2</p> <p>UNIT III: Assessment of vertebral column:</p> <p>Cervical</p> <p>Thoracic</p> <p>Lumbo-scaral including Tests of Neural Tension.</p> <p>Common sports injuries of spine with respect to causation, prevention and management</p> <p>Sporting emergencies & first aid</p> <p>Head and neck</p> <p>Face</p> <p>Abdominal injuries</p> <p>UNIT IV: Cardio pulmonary Resuscitation; Shock management, Internal and External</p> <p>Bleeding, Splinting, Stretcher use-Handling and transfer</p> <p>Management of Cardiac Arrest, acute asthma, epilepsy, drowning, burn</p> <p>Medical management of Mass Participation</p> <p>Heat stroke and Heat illness.</p> <p>UNIT V</p> <p>Kin anthropometric evaluation</p> <p>Kinesiological EMG</p> <p>Sports specific injuries, with special emphasis on the specific risk factor, nature of Sports, kind of medical intervention anticipated and prevention with respect to various sporting events</p> <p>Individual events: Field & Track</p> <p>Team events: Hockey, Cricket, and Football</p> <p>Contact and Non-contact sports</p> <p>Water sports</p>	
1	MPT 201	<p>BIOENGINEERING AND REHABILITATION PRINCIPLES</p> <p>UNIT-I</p> <ul style="list-style-type: none"> I. Conceptual framework of rehabilitation, roles of rehabilitation team members, definitions and various models of rehabilitation. International classification of functioning II. Epidemiology of disability with emphasis on locomotor disability, impact of disability on individual, family, and society. III. Preventive aspects of disability 	<p>BIOENGINEERING AND REHABILITATION PRINCIPLES (MPT 201)</p> <p>UNIT-I</p> <p>Conceptual framework of rehabilitation, roles of rehabilitation team members, definitions and various models of rehabilitation. International classification of functioning, Epidemiology of disability with emphasis on locomotors disability, impact of disability on individual, family, and society.Preventive aspects of disability and organizational skills to run disability services.</p> <p>UNIT-II</p>	Syllabus revision

		<p>and organizational skills to run disability services.</p> <p>UNIT-II</p> <p>IV. Model of service delivery : feature , merits and demerits of institutional based rehabilitation , out reach programmes, Community based rehabilitation</p> <p>V. Legal Aspect in Disabilities: PWD act , national trust act , RCI act, Statutory provisions Schemes of assistance to persons with disabilities</p> <p>VI. Govt and NGO participation in disability RCI</p> <p>UNIT-III</p> <p>VII. Principles of Orthotics- types, indications, contra indications, assessment (check out), uses and fitting –region wise.</p> <ol style="list-style-type: none"> i. Orthotics for the Upper Limb ii. Orthotics for the Lower Limb iii. Orthotics for the Spine <p>VIII. Principles of prostheses- types, indications, contra indications, assessment (check out), uses and fitting –region wise.</p>	<p>Model of service delivery : feature, merits and demerits of institutional based rehabilitation, outreach programmes, Community based rehabilitation, Legal Aspect in Disabilities: PWD act, national trust act, RCI act, Statutory provisions Schemes of assistance to persons with disabilities Govt and NGO participation in disability RCI.</p> <p>UNIT-III</p> <p>Principles of Orthotics- types, indications, contra indications, assessment (check out), uses and fitting – region wise.</p> <p>Orthotics for the Upper Limb</p> <p>Orthotics for the Lower Limb</p> <p>Orthotics for the Spine</p> <p>Principles of prostheses- types, indications, contra indications, assessment (check out), uses and fitting – region wise.</p> <p>UNIT-IV</p> <p>An outline of principles and methods of rehabilitation of speech and hearing disability</p> <p>An outline of principles and methods of vocational and social rehabilitation</p> <p>An outline of principles and methods of rehabilitation of mentally handicapped.</p> <p>UNIT-V</p> <p>An outline of principles, methods and scope occupational therapy</p> <p>Architectural Barriers: Describe architectural barriers and possible modifications with reference to Rheumatoid Arthritis, CVA, Spinal Cord Injury and other disabling conditions.</p> <p>An outline of the principles and process of disability evaluation</p>	
2	MPT 202 (A)	<p>Applied Exercise Physiology</p> <p>UNIT-I</p> <p><u>Training and conditioning</u></p> <p>Physiological basis of physical training , training principles , interval training , continues running concept of anaerobic threshold and vo2 max , physiological effects of various physical training methods,- aerobic and anaerobic training , strength training factors influencing training effects – intensity, frequency , duration , detraining, , process of recovery , post exercise oxygen consumption factors affecting recovery process , overtraining.</p> <p>UNIT-II</p> <p><u>Body temperature regulation during exercise</u></p>	<p>Applied Exercise Physiology</p> <p>MPT 202(A)</p> <p>UNIT I-Training and conditioning</p> <p>Physiological basis of physical training, training principles, interval training, continues running concept of anaerobic threshold and vo2 max, physiological effects of various physical training methods,- aerobic and anaerobic training, strength training factors influencing training effects – intensity, frequency, duration , detraining,, process of recovery, post exercise oxygen consumption factors affecting recovery process, overtraining.</p> <p>UNIT II-Body temperature regulation during exercise</p> <p>Mechanism of regulation of body temperature, Body temperature responses during exercise, Physiological responses to exercise in the heat, Acclimatization to exercise in the heat, Effects of age and gender on body</p>	Syllabus revision

		<p>Mechanism of regulation of body temperature , Body temperature responses during exercise, Physiological responses to exercise in the heat , Acclimatization to exercise in the heat , Effects of age and gender on body temperature regulation during exercise, Physical activity and heat illness[heat exhaustion, dehydration exhaustion heat cramps & heat stroke] Prevention of Heat Disorders.</p> <p>UNIT-III Exercise in the Cold</p> <p>Effects of exposure to cold and severe cold ,Wind chill, Temperature receptors., Role of hypothalamus , shivering , Frost Bite and other problems, Clothing and Environment.</p> <p>UNIT-IV Exercise at Altitude</p> <p>Exercise at altitude immediate physiological responses at high altitude , physiological basis of altitude training , phases of altitude training and specific training effects , altitude acclimatization , oxygen dissociation curve at altitude , disorders associated with altitude training.</p> <p>UNIT-V Exercise and body fluids</p> <p>Measurement and regulation of body fluids, Body fluid responses and adaptations to exercise, Effects of dehydration and fluid replenishment on physiological responses to exercise and performance Fluid/carbohydrate replacement beverages.</p>	<p>temperature regulation during exercise, Physical activity and heat illness[heat exhaustion, dehydration exhaustion heat cramps & heat stroke] Prevention of Heat Disorder. Exercise in the Cold, Effects of exposure to cold and severe cold ,Wind chill, Temperature receptors., Role of hypothalamus, shivering, Frost Bite and other problems, Clothing and Environment.</p> <p>UNIT III- Exercise at Altitude</p> <p>Exercise at altitude immediate physiological responses at high altitude, physiological basis of altitude training, phases of altitude training and specific training effects, altitude acclimatization, oxygen dissociation curve at altitude, disorders associated with altitude training.</p> <p>UNIT IV-Exercise and body fluids</p> <p>Measurement and regulation of body fluids, Body fluid responses and adaptations to exercise, Effects of dehydration and fluid replenishment on physiological responses to exercise and performance Fluid/carbohydrate replacement beverages.</p> <p>UNIT V- Physical activity, body composition, energy balance and weight control</p> <p>Significance and measurement of body composition, Body composition during growth and aging, Body composition and physical performance, Effect of diet and exercise on body composition, Physical activity, energy balance, nutrient balance and weight control, Physical activity, fat distribution and the metabolic syndrome, Healthy weight loss, Ways and methods of weight reduction, fluid maintenance, disordered eating, nutritional ergogenic aids, diet supplements in athletes and others involved in physical activity.</p> <p>Exercise and Diabetes Mellitus</p> <p>Exercise in insulin, requiring diabetes and non-insulin dependent diabetes mellitus, Effect of physical training on glucose tolerance and insulin sensitivity, Management of diabetes by diet and insulin.</p>	
3	MPT 202 (B)	<p>DISASTER MANAGEMENT</p> <p>UNIT I:</p> <ul style="list-style-type: none"> • Definition and types of disaster Hazards and Disasters, • Risk and Vulnerability in Disasters, Natural and Man-made disasters, earthquakes, floods drought, landside, land subsidence, cyclones, volcanoes, tsunami, avalanches, global climate extremes. • Man-made disasters: Terrorism, gas and radiations leaks, toxic waste disposal, oil spills, forest fires. <p>Unit: II</p>	<p>DISASTER MANAGEMENT MPT 202 (B)</p> <p>UNIT I:</p> <ul style="list-style-type: none"> • Definition and types of disaster Hazards and Disasters, • Risk and Vulnerability in Disasters, Natural and Man-made disasters, earthquakes, floods drought, landside, land subsidence, cyclones, volcanoes, tsunami, avalanches, global climate extremes. • Man-made disasters: Terrorism, gas and radiations leaks, toxic waste disposal, oil spills, forest fires. <p>Unit: II</p> <ul style="list-style-type: none"> • Study of Important disasters • Earthquakes and its types, magnitude and intensity, seismic zones of India, major fault 	Syllabus revision

		<ul style="list-style-type: none"> Study of Important disasters Earthquakes and its types, magnitude and intensity, seismic zones of India, major fault systems of India plate, flood types and its management, drought types and its management, landside and its managements case studies of disasters in Sikkim (e.g) Earthquakes, Landside). Social Economics and Environmental impact of disasters. <p>Unit: III</p> <ul style="list-style-type: none"> Mitigation and Management techniques of Disaster Basic principles of disasters management, Disaster Management cycle, Disaster management policy. National and State Bodies for Disaster Management, Early Warning Systems, Building design construction in highly seismic zones, retrofitting of buildings. 4 <p>Unit IV</p> <ul style="list-style-type: none"> Training, awareness program and project on disaster management Training and drills for disaster preparedness, Awareness generation program <p>UNIT V:</p> <ul style="list-style-type: none"> Mini project on disaster risk assessment preparedness for disasters with reference to disasters in Sikkim and its surrounding areas. 	<p>systems of India plate, flood types and its management, drought types and its management, landside and its managements case studies of disasters in Sikkim (e.g) Earthquakes, Landside).</p> <ul style="list-style-type: none"> Social Economics and Environmental impact of disasters. <p>Unit: III</p> <ul style="list-style-type: none"> Mitigation and Management techniques of Disaster Basic principles of disasters management, Disaster Management cycle, Disaster management policy. National and State Bodies for Disaster Management, Early Warning Systems, Building design construction in highly seismic zones, retrofitting of buildings. 4 <p>Unit IV</p> <ul style="list-style-type: none"> Training, awareness program and project on disaster management Training and drills for disaster preparedness, Awareness generation program Usages of GIS and Remote sensing techniques in disaster management, <p>UNIT V:</p> <ul style="list-style-type: none"> Mini project on disaster risk assessment preparedness for disasters with reference to disasters in Sikkim and its surrounding areas. 	
4	MPT 203A	<p><u>SPECILIZATION IN NEURO PHYSIOTHERAPY</u> PHYSIOTHERAPY& REHABILITATION IN NEUROLOGICAL DISORDERS –I</p> <p>UNIT-I Cerebral Trauma (Head and Brain Injury) Epidemiology, Pathophysiologies, Symptoms, Signs, Investigation, Management, Pre and Post Operative Physiotherapy, Complications.</p> <ol style="list-style-type: none"> Closed skull Fractures. Haematomas: Epidural, Sub Dural, Intracerebral Open cranio-cerebral injuries Reconstruction operation in head 	<p><u>SPECILIZATION IN NEURO PHYSIOTHERAPY</u> PHYSIOTHERAPY& REHABILITATION IN NEUROLOGICAL DISORDERS –I MPT 203A</p> <p>UNIT 1-Cerebral Trauma (Head and Brain Injury) Epidemiology, Pathophysiology, Symptoms, Signs, Investigation, Management, Pre and Post Operative Physiotherapy, Complications. Closed skull Fractures. Hematomas: Epidural, Sub Dural, Intracerebral Open cranio-cerebral injuries Reconstruction operation in head injuries Stupor and Coma The Neural basis of consciousness. Lesions responsible for Stupor and Coma The assessment and Investigation of the unconscious patient. The Management of the Unconscious patient.</p>	Syllabus revision

injuries

UNIT-II

Stupor and Coma

1. The Neural basis of consciousness.
2. Lesions responsible for Stupor and Coma
3. The assessment and Investigation of the unconscious patient.
4. The Management of the Unconscious patient.

UNIT-III

Disorders of the Cerebral Circulation - Stroke :

1. Epidemiology of the stroke and TIA
2. Causes,types and pathophysiology
3. Clinical features & investigations
4. Treatment of different type of stroke
5. Recovery & rehabilitation
6. Stroke prevention

UNIT-IV

Neoplastic lesion

1. Intracranial Tumors
2. Cerebral Hemisphere
3. Tumors from related structures, Meninges, Cranial Nerves.
4. cerebellar

UNIT-V

Infections

- 1 Meningitis
- 2 Encephalitis
- 3 Brain abscess
- 4 Neuro Syphilis(Tabes dorsalis)
- 5 Herpes Simplex
- 6 Chorea
- 7 Tuberculosis
- 8 Chronic fatigue syndrome
- 9 AIDS

Cerebrovascular Diseases

- a. Intracranial Aneurysm
- b. Spontaneous Subdural
- c. Extradural Haemorrhage

UNIT 2- Disorders of the Cerebral Circulation - Stroke

Epidemiology of the stroke and TIA
Causes,types and pathophysiology
Clinical features & investigations
Treatment of different type of stroke
Recovery & rehabilitation
Stroke prevention
Neoplastic lesion -
Intracranial Tumors
Cerebral Hemisphere
Tumors from related structures, Meninges, Cranial Nerves.
cerebellar

Cerebrovascular Diseases

Intracranial Aneurysm
Spontaneous Subdural
Extradural Hemorrhage
Intracerebral Hemorrhage
Subarachnoid hemorrhage
AV Malformations

UNIT 3-Infections

Meningitis
Encephalitis
Brain abscess
Neuro Syphilis(Tabes dorsalis)
Herpes Simplex
Chorea
Tuberculosis
Chronic fatigue syndrome
AIDS

UNIT 4-Demyelinating Diseases of the Nervous system

Classification of Demyelinating Diseases

Multiple Sclerosis.

Diffuse Sclerosis

UNIT 5-Movement disorders

Akinetic-rigidity Syndromes disorder and other extra Pyramidal Syndromes

Dyskinetic disorders.

		<p>d. intracerebral Haemorrhage</p> <p>e. Subarachnoid haemorrhage</p> <p>f. AV Malformations</p>		
5	MPT 204 A	<p>PHYSIOTHERAPY AND REHABILITATION IN NEUROLOGICAL DISORDERS –II</p> <p>SECTION-A</p> <p><u>I. Degenerative Diseases of the Spinal cord and Cauda Equina</u></p> <ol style="list-style-type: none"> 1. <u>Ataxia (sensory)</u> 2. <u>Motor Neuron Disease</u> 3. <u>Spinal Muscular Atrophy</u> 4. <u>Spino-cerebellar Degeneration(Friedreich's Ataxia)</u> 5. <u>Transverse Myelitis</u> <p>II.Disorders / rehabilitation of the spinal cord & cauda equina</p> <ol style="list-style-type: none"> 1. Acute Traumatic injuries of the spinal cord 2. Slow progressive compression of the spinal cord 3. Syringomyelia 4. Ischaemia and infection of the Spinal Cord (Transverse myelitis) and Cauda Equina 5. Tumors of Spinal Cord 6. Surges surgical management in Spinal Cord <p>III.Disorders of peripheral nerves:</p> <ol style="list-style-type: none"> 1. Peripheral neuropathies and peripheral nerve lesions 2. Clinical diagnosis of peripheral neuropathy 3. All types of levels of peripheral neuropathies and brachial plexus lesions 4. Causalgia 5. Reflex sympathetic dystrophy 6. Traumatic, Compressive and Ischaemic neuropathy 7. Spinal Radiculitis and Radiculopathy 8. Hereditary motor and sensory neuropathy 9. Acute idiopathic polyneuritis 10. Neuropathy due to infections 11. Vasculomotor neuropathy 12. Neuropathy due to Systemic Medical Disorders 13. Drug induced neuropathy 14. Metal poisoning, Chemical neuropathies 15. Polyneuropathies:Acute,Subacute and 	<p>PHYSIOTHERAPY & REHABILITATION IN NEUROLOGICAL DISORDERS –II</p> <p>MPT 204A</p> <p>UNIT I. Degenerative Diseases of the Spinal cord and Cauda Equina</p> <p>Ataxia (sensory)</p> <p>Motor Neuron Disease</p> <p>Spinal Muscular Atrophy</p> <p>Spino-cerebellar Degeneration(Friedreich's Ataxia)</p> <p>Transverse Myelitis</p> <p>UNIT II.Disorders / rehabilitation of the spinal cord & cauda equina</p> <p>Acute Traumatic injuries of the spinal cord</p> <p>Slow progressive compression of the spinal cord</p> <p>Syringomyelia</p> <p>Ischemia and infection of the Spinal Cord (Transverse myelitis) and Cauda Equina</p> <p>Tumors of Spinal Cord</p> <p>Surges surgical management in Spinal Cord</p> <p>UNIT III.Disorders of peripheral nerves:</p> <p>Peripheral neuropathies and peripheral nerve lesions</p> <p>Clinical diagnosis of peripheral neuropathy</p> <p>All types of levels of peripheral neuropathies and brachial plexus lesions</p> <p>Causalgia</p> <p>Reflex sympathetic dystrophy</p> <p>Traumatic, Compressive and Ischemic neuropathy</p> <p>Spinal Radiculitis and Radiculopathy</p> <p>Hereditary motor and sensory neuropathy</p> <p>Acute idiopathic polyneuritis</p> <p>Neuropathy due to infections</p> <p>Vasculomotor neuropathy</p> <p>Neuropathy due to Systemic Medical Disorders</p> <p>Drug induced neuropathy</p> <p>Metal poisoning, Chemical neuropathies</p> <p>Polyneuropathies:Acute,Subacute and Chronic level polyneuropathy</p> <p>Surgeries on peripheral Nerves</p> <p>UNIT IV.Disorders of muscles:</p> <p>Muscular dystrophies of adulthood</p> <p>The Myotonic disorders</p> <p>Inflammatory disorders of muscle</p> <p>Myasthenia gravis</p> <p>Endocrine and metabolic myopathies</p> <p>Duchene muscular dystrophy</p> <p>Progressive muscular dystrophy.</p>	Syllabus revision

		<p>Chronic level polyneuropathy 16. Surgeries on peripheral Nerves</p> <p>SECTION-B I.Disorders of muscles:</p> <ol style="list-style-type: none"> 1. Muscular dystrophies of adulthood 2. The Myotonic disorders 3. Inflammatory disorders of muscle 4. Myasthenia gravis 5. Endocrine and metabolic myopathies 6. Duchenne muscular dystrophy 7. Progressive muscular dystrophy. <p>II. Deficiency & Nutritional Disorders</p> <ol style="list-style-type: none"> 1. Deficiency of vitamins & related disorders 2. Other nutritional neuropathies 	<p>UNIT V</p> <ol style="list-style-type: none"> a) Deficiency & Nutritional Disorders, Deficiency of vitamins & related disorders, Other nutritional neuropathies b) Disorders of Autonomic nervous system:Bladder and Bowel dysfunction,,Orthostatic hypotension, Autonomic dysreflexia, Autonomic Neuropathy. c) Nervous system aging effects and Geriatric neurological disorders 	
6	MPT 205 A	<p>CURRENT CONCEPTS IN NEURO PHYSIOTHERAPY SECTION – A : <u>Rehabilitation And Therapeutic Exercises:</u></p> <p>I. Treatment planning process:</p> <ol style="list-style-type: none"> 1. Classification of treatment techniques based on current concepts & approaches. 2. All types of strengthening techniques. 3.Overview of Neurological Impairments and their treatment, with emphasis on recording and documentation. <p>II. Therapeutic exercises used in neurological disorders.</p> <p>III. Neuromuscular Training</p> <ol style="list-style-type: none"> i. Methods For Optimizing Neuromuscular & Postural Control : Proprioception Training And Kinesthetic Training (Sensory Integration), ii. Problem Solving Approach, iii. Motor Control , iv. Clinical Decision Making And Clinical Reasoning, v. Evidence Based Practice. <p>SECTION-B:</p> <p><u>Advanced Neuro-therapeutic techniques:</u></p> <ol style="list-style-type: none"> I. Muscle Energy Techniques (MET) Reflexology, II. Cranio-sacral therapy, III. Motor learning Theories – 	<p>CURRENT CONCEPTS IN NEURO PHYSIOTHERAPY MPT 205A</p> <p>UNIT 1 Treatment planning process: Classification of treatment techniques based on current concepts & approaches. All types of strengthening techniques. Overview of Neurological Impairments and their treatment, with emphasis on recording and documentation. Therapeutic exercises used in neurological disorders.</p> <p>UNIT 2 Neuromuscular Training Methods For Optimizing Neuromuscular & Postural Control : Proprioception Training And Kinesthetic Training (Sensory Integration), Problem Solving Approach, Motor Control, Clinical Decision Making And Clinical Reasoning, Evidence Based Practice.</p> <p>UNIT 3 Advanced Neuro-therapeutic techniques: Muscle Energy Techniques (MET) Reflexology, Cranio-sacral therapy, Motor learning Theories – Concept, Therapeutic, Positional. Myofacialrelease techniques Biofeedback,</p> <p>UNIT 4 Nerve mobilization (Concept): Butler concept. Management of pain and Spasticity and paralysis in neurological disorders.</p>	Syllabus revision

		<p>Concept, Therapeutic, Positional.</p> <p>IV. Nerve mobilization (Concept): Butler concept.</p> <p>V. Management of pain and Spasticity and paralysis in neurological disorders</p> <p>VI. Special Neurological Approaches and Their Concept:</p> <p>i. Neurodevelopmental Approach,</p>	<p>UNIT 5</p> <p>Special Neurological Approaches and Their Concept: Neurodevelopment Approach, Brunnstrom's Approach, PNF Approach, MRP and Inhibition & facilitation techniques, Modified CIMT, Electrotherapy in Neurological disorders.</p>	
7	MPT 203 B	<p><u>SPECILIZATION IN ORTHO PHYSIOTHERAPY</u> PHYSIOTHERAPY IN TRAUMATIC ORTHOPAEDIC CONDITIONS</p> <p><u>SECTION A</u> UNIT I-Fracture and soft tissue injuries of upper limb</p> <p>i. Shoulder and arm</p> <p>ii. Elbow and forearm</p> <p>iii. Wrist and hand</p> <p>UNIT II:Fracture and soft tissue injuries of lower limb</p> <p>i. Pelvis</p> <p>ii. Hip and thigh</p> <p>iii. Knee and leg</p> <p>iv. Ankle and foot</p> <p><u>SECTION B</u> UNIT III:Method of different types of some common surgeries and its rehabilitation.</p> <p>i.Menisectomy</p> <p>ii.Patellectomy</p> <p>iii.Arthroplasties :-Shoulder, Elbow, Hip, Knee Arthroplasty.</p> <p>iv.Arthrodesis :- triple arthrodesis, Hip, Knee, Shoulder Elbow arthrodesis, Spinal Fusion</p> <p>v.Osteotomies</p> <p>vi.Bone grafting, Bone Lengthening</p> <p>vii.Tendon transfers</p> <p>UNIT IV :Soft Tissue release</p> <p>iX.Nerve Repair and grafting etc.</p> <p>UNIT V:Burns</p>	<p><u>SPECILIZATION IN ORTHO</u> <u>PHYSIOTHERAPY</u> PHYSIOTHERAPY IN TRAUMATIC ORTHOPAEDIC CONDITIONS MPT 203B</p> <p>UNIT 1-Fracture and soft tissue injuries of upper limb</p> <p>iv. Shoulder and arm</p> <p>v. Elbow and forearm</p> <p>vi. Wrist and hand</p> <p>UNIT 2-Fracture and soft tissue injuries of lower limb</p> <p>v. Pelvis</p> <p>vi. Hip and thigh</p> <p>vii. Knee and leg</p> <p>viii. Ankle and foot</p> <p>UNIT 3-Method of different types of some common surgeries and its rehabilitation.</p> <p>i. Menisectomy</p> <p>ii. Patellectomy</p> <p>iii. Arthroplasty :-Shoulder, Elbow, Hip, Knee Arthroplasty.</p> <p>iv. Arthrodesis :- triple arthrodesis, Hip, Knee, Shoulder Elbow arthrodesis, Spinal Fusion</p> <p>v. Osteotomy</p> <p>vi. Bone grafting, Bone Lengthening</p> <p>vii. Tendon transfers</p> <p>viii. Soft Tissue release</p> <p>ix. Nerve Repair and grafting etc.</p> <p>UNIT 4-Burns</p> <p>UNIT 5-Amputation</p> <p>i. Types, Levels & procedures</p> <p>ii. Pre and post operative rehabilitation.</p> <p>iii. Prosthesis and stump care.</p> <p>iv. Limb transplantation Surgery</p>	Syllabus revision
8	MPT 204 B	<p>PHYSIOTHERAPY IN VERTEBRAL DISORDERS</p> <p><u>SECTION A</u> <u>UNIT 1:</u></p>	<p>PHYSIOTHERAPY IN VERTEBRAL DISORDERS MPT 204B</p> <p>UNIT 1</p>	Syllabus revision

		<p>I. Review of anatomy and pathomechanics of vertebral column</p> <p>II. Application of advance techniques like Maitland, Mckenzie, Mulligan</p> <p>III. Principles of management</p> <p>IV. Congenital disorders of vertebral column</p> <p>V. Congenital and Acquired deformities</p> <p>VI. Ergonomics</p> <p>UNIT II:Non traumatic disorders of vertebral column</p> <p>i. Degenerative</p> <p>ii. Infections</p> <p>iii. Inflammatory</p> <p>iv. Spinal instabilities</p> <p>SECTION B</p> <p>UNIT III:Traumatic injuries of vertebral column: General & regional injuries.</p> <p>UNIT IV:Spinal cord injuries</p> <p>i.Types, Classifications</p> <p>ii.Pathology</p> <p>iii.Level</p> <p>iv.Examination</p> <p>v.Management & rehabilitation</p> <p>vi.Orthopedic surgeries</p> <p>UNIT V:Bio engineering appliances & support devices</p>	<p>VII. Review of anatomy and pathomechanics of vertebral column</p> <p>VIII. Application of advance techniques like Maitland, McKenzie, Mulligan</p> <p>IX. Principles of management</p> <p>X. Congenital disorders of vertebral column.</p> <p>XI. Congenital and Acquired deformities</p> <p>XII. Ergonomics</p> <p>UNIT 2-Non traumatic disorders of vertebral column</p> <p>I. Degenerative</p> <p>II. Infections</p> <p>III. Inflammatory</p> <p>IV. Spinal instabilities</p> <p>UNIT 3-Traumatic injuries of vertebral column: General & regional injuries, Soft tissue injuries, tightness, structural changes, Bone injuries (fractures & dislocations of spine),pre and post operative management of spinal surgeries.</p> <p>UNIT 4-Spinal cord injuries</p> <p>Types, Classifications</p> <p>Pathology</p> <p>Level</p> <p>Examination</p> <p>Management & rehabilitation</p> <p>Orthopedic surgeries</p> <p>Pre & post operative rehabilitation</p> <p>UNIT 5-Bio engineering appliances & support devices</p>	
9	MPT 205 B	<p>Current Concepts in Musculoskeletal Physiotherapy</p> <p>SECTION A</p> <p>UNIT I:Pain management</p> <p>I. Back School</p> <p>II. Butler mobilization of nerves</p> <p>UNIT II: Manual Therapy: Introduction, History, Basic Classification, Assessment for manipulation, discussion in brief about the concepts of mobilization like</p> <p>i. Cyriax,</p> <p>ii. Maitland</p> <p>iii. Mulligan</p> <p>SECTION B</p> <p>UNIT III:Myofasical Release: Concept & brief discussion of its application technique</p> <p>UNIT IV:Muscle Energy Techniques</p> <p>UNIT V:Body Composition & Weight Control:</p>	<p>Current Concepts in Musculoskeletal Physiotherapy</p> <p>UNIT 1</p> <p>I.Pain management</p> <p>II.Back School</p> <p>III.Butler mobilization of nerves</p> <p>UNIT2</p> <p>Manual Therapy: Introduction, History, Basic Classification, Assessment for manipulation, discussion in brief about the concepts of mobilization like</p> <p>I. Cyriax,</p> <p>II. Maitland</p> <p>III. Mulligan</p> <p>UNIT 3-Myofasical Release: Concept & brief discussion of its application technique.</p> <p>UNIT 4-Muscle Energy Techniques and Positional release technique.</p> <p>UNIT 5-Body Composition & Weight Control:</p> <p>I. Composition of human body</p>	Syllabus revision

		<p>Composition of human body</p> <p>ii.Somatotyping</p> <p>iii.Techniques of body composition analysis</p> <p>iv.Obesity</p>	<p>II. Somatotyping</p> <p>III. Techniques of body composition analysis</p> <p>IV. Obesity</p> <p>V. Health risks of obesity</p> <p>VI. Weight control</p>	
10	MPT 203 C	<p align="center"><u>SPECILIZATION IN SPORTS</u> <u>PHYSIOTHERAPY</u></p> <p align="center">Non – Traumatic Medical Conditions of Athlete</p> <p><u>SECTION A</u></p> <p>UNIT 1: Illness</p> <p>I. Hypertension</p> <p>II. Urine abnormalities</p> <p>II. Exercise Induced Asthma</p> <p>V. Anemia</p> <p>V. Delayed onset muscle soreness (DOMS)</p> <p>VI. Runner’s high & Exercise addiction.</p> <p>II. G.I.T. Diseases</p> <p>II. Exercises and congestive heart failure</p> <p>X. Exercise for Post coronary & bye pass patients</p> <p>X. Exercise for diabetics</p> <p>KI. Diagnosis and management of skin conditions of Athletes</p> <p><u>SECTION B</u></p> <p>UNIT II:Female Specific problems</p> <ol style="list-style-type: none"> 1. Sports Amenorrhea. 2. Injury to female reproductive tract. 3. Menstrual Synchrony. 4. Sex determination. 5. Exercise and pregnancy. 6. Eating disorders in athletes <p>UNIT III:Common Infectious disease:</p> <ol style="list-style-type: none"> 7. Common Cold 8. Diarrhoea 9. Dysentery 10. Typhoid 11. Cholera 12. Amoebiasis 13. Food Poisoning 14. Tuberculosis <p>UNIT IV:AIDS in sports people.</p>	<p align="center"><u>SPECILIZATION IN SPORTS</u> <u>PHYSIOTHERAPY</u></p> <p align="center">Non – Traumatic Medical Conditions of Athlete MPT 203C</p> <p>UNIT 1-</p> <ul style="list-style-type: none"> • Illness • Hypertension • Urine abnormalities • Exercise Induced Asthma • Anemia • Delayed onset muscle soreness (DOMS) • Runner’s high & Exercise addiction. • G.I.T. Diseases • Exercises and congestive heart failure • Exercise for Post coronary & bye pass patients <p>II. Exercise for diabetics</p> <p>UNIT 2-Diagnosis and management of skin conditions of Athletes</p> <ol style="list-style-type: none"> 1. Bacterial infections 2. Fungal Infections 3. Viral infections 4. Boils 5. Cellulites. <p>UNIT 3-Female Specific problems</p> <ol style="list-style-type: none"> 15. Sports Amenorrhea. 16. Injury to female reproductive tract. 17. Menstrual Synchrony. 18. Sex determination. 19. Exercise and pregnancy. 20. Eating disorders in athletes <p>UNIT 4-Common Infectious disease:</p> <ol style="list-style-type: none"> 1. Common Cold 2. Diarrhea 3. Dysentery 4. Typhoid 5. Cholera 6. Amoebiasis 7. Food Poisoning 8. Tuberculosis 9. Malaria 10. Hepatitis 11. Venereal disease etc. 	Syllabus revision

			UNIT 5-AIDS in sports people.	
11	MPT 204 C	<p style="text-align: center;">Sports Psychology</p> <p><u>SECTION A</u></p> <p><u>UNIT 1</u></p> <ul style="list-style-type: none"> • History and current status of Sports Psychology. • Personality Assessment and sports personality. <ol style="list-style-type: none"> 1. Theories of personality 2. Personality assessment • Attention and perception in sports. <ol style="list-style-type: none"> 1. Attention 2. Perception • Concentration training in sports. <ol style="list-style-type: none"> 1. Basic principles of concentration 2. Concentration training 3. Concentration awareness exercises • Motivational orientation in sports. <ol style="list-style-type: none"> 1. Athlete's needs of motivation 2. Motivational inhibitors 3. Motivational techniques <p><u>UNIT II</u></p> <p>. Pre-competitive anxiety.</p> <ol style="list-style-type: none"> 1. Source of PCA 2. Effect of PCA on performance <p>VII. Relaxation Training.</p> <ol style="list-style-type: none"> 1. Definition 2. Types of relaxation trainings <ol style="list-style-type: none"> i) Progressive muscle relaxation ii) Breathing exercises iii) Yog-nidra iv) Transcendental meditation <p><u>UNIT III</u></p> <p>. Aggression in sports.</p> <ol style="list-style-type: none"> 1. Theories of aggression 2. Management of aggression <p>IX. Role of Psychology in Dealing with injuries.</p> <p>X. Eating disorders.</p> <ol style="list-style-type: none"> a. Etiology of eating disorders b. Types of eating disorders c. Complications of eating disorders <p>XI. Goal setting</p> <p><u>SECTION B</u></p> <p><u>UNIT IV</u></p> <p>Psychological aspect of doping</p> <ol style="list-style-type: none"> I. Psychological preparation of elite athletes <ol style="list-style-type: none"> 1. Concept of psychological 	<p style="text-align: center;">Sports Psychology</p> <p style="text-align: center;">MPT 204C</p> <p><u>UNIT 1</u></p> <ul style="list-style-type: none"> • History and current status of Sports Psychology. • Personality Assessment and sports personality. <ol style="list-style-type: none"> 1. Theories of personality 2. Personality assessment • Attention and perception in sports. <ol style="list-style-type: none"> 1. Attention 2. Perception • Concentration training in sports. <ol style="list-style-type: none"> 4. Basic principles of concentration 5. Concentration training 6. Concentration awareness exercises • Motivational orientation in sports. <ol style="list-style-type: none"> 4. Athlete's needs of motivation 5. Motivational inhibitors 6. Motivational techniques <p>UNIT 2 :Pre-competitive anxiety.</p> <ol style="list-style-type: none"> 1. Source of PCA 2. Effect of PCA on performance <p>Relaxation Training.</p> <ol style="list-style-type: none"> 1. Definition 2. Types of relaxation trainings <ol style="list-style-type: none"> i) Progressive muscle relaxation ii) Breathing exercises iii) Yog-nidra iv) Transcendental meditation <p>UNIT 3:Aggression in sports.</p> <ol style="list-style-type: none"> 1. Theories of aggression 2. Management of aggression <p>IX. Role of Psychology in Dealing with injuries.</p> <p>Eating disorders.</p> <ol style="list-style-type: none"> a. Etiology of eating disorders b. Types of eating disorders c. Complications of eating disorders <p>XI. Goal setting</p> <p><u>UNIT 4</u></p> <p>V. Psychological aspect of doping</p> <p>VI. Psychological preparation of elite athletes <ol style="list-style-type: none"> 1. Concept of psychological preparation </p> <p>VII. Biofeedback training</p> <p>VIII. Mental imagery</p> <p>IX. Stress management</p>	Syllabus revision

		<p>preparation</p> <p>II. Biofeedback training</p> <p>III. Mental imagery</p> <p>VI. Group Behaviour and leadership</p> <ol style="list-style-type: none"> 1. Nature of group behaviour and group. 2. Types of group. 3. Educational implication of group behaviour. 4. Meaning of leadership, types of leadership quality of leadership, training and functioning of leadership. <p>IV. Emotion</p> <ol style="list-style-type: none"> 1. Meaning of emotion. 2. Characteristics of emotion. 3. Meaning of controlling and training of emotions and its importance. 	<p>1. Principles of Stress Management</p> <p>2. Stress Management technique.</p> <p>UNIT 5- Group Behavior and leadership</p> <ol style="list-style-type: none"> 1. Nature of group behavior and group. 2. Types of group. 3. Educational implication of group behavior. 4. Meaning of leadership, types of leadership quality of leadership, training and functioning of leadership. <p>Emotion</p> <ol style="list-style-type: none"> 1. Meaning of emotion. 2. Characteristics of emotion. 3. Meaning of controlling and training of emotions and its importance. <p>4. Contribution of sports to emotional health.</p> <p>5. Meaning of sentiment, its type, importance and formation.</p>	
12	MPT 205 C	<p>Current Concepts of Sports Medicine Physiotherapy</p> <p>SECTION A</p> <p>UNIT 1</p> <ol style="list-style-type: none"> I. Exercise and Common Pulmonary Conditions <ol style="list-style-type: none"> 1. Exercise induced bronchial obstruction 2. Exercise in chronic airway obstruction 3. Air pollution and exercise II. Exercise and Cardiac Conditions <ol style="list-style-type: none"> 1. Exercise prescription for heart disease 2. Exercise in primary prevention in ischemic heart disease 3. Exercise for secondary prevention of ischemic heart disease III. Diabetes and Exercise <ol style="list-style-type: none"> 1. Exercise in diabetic patients 2. Exercise as a method of control of diabetes <p>UNIT II</p> <ol style="list-style-type: none"> IV. Protective equipments design of shoe safety factors in equipment. V. Special concerns for handicapped athletes VI. Disability sports, Paralympics <p>SECTION B</p> <p>UNIT III</p> <p>Exercises for special categories</p>	<p>Current Concepts of Sports Medicine Physiotherapy MPT 205C</p> <p>UNIT 1</p> <p>Exercise and Common Pulmonary Conditions</p> <p>Exercise induced bronchial obstruction</p> <p>Exercise in chronic airway obstruction</p> <p>Air pollution and exercise</p> <p>Exercise and Cardiac Conditions</p> <p>Exercise prescription for heart disease</p> <p>Exercise in primary prevention in ischemic heart disease</p> <p>Exercise for secondary prevention of ischemic heart disease</p> <p>Diabetes and Exercise</p> <p>Exercise in diabetic patients</p> <p>Exercise as a method of control of diabetes.</p> <p>UNIT 2</p> <p>Protective equipments design of shoe safety factors in equipment.</p> <p>Special concerns for handicapped athletes</p> <p>Disability sports, Paralympics</p> <p>UNIT 3</p> <p>Exercises for special categories</p> <p>Child and adolescent athlete's problems</p> <p>Special problems of older athletes</p> <p>Sports and exercise programme for geriatrics and rheumatic population</p>	Syllabus revision

		<ol style="list-style-type: none"> 1. Child and adolescent athlete's problems 2. Special problems of older athletes 3. Sports and exercise programme for geriatrics and rheumatic population <p><u>UNIT IV</u> Doping in Sports</p> <ol style="list-style-type: none"> II. IOC prohibited drugs- groups and classifications III. IOC rules and regulations on doping in sports hazards of prohibited substances. 	<p>UNIT 4-Doping in Sports IOC prohibited drugs- groups and classifications IOC rules and regulations on doping in sports hazards of prohibited substances.</p> <p>UNIT 5-Identification of talent for sports – Meaning and its importance Detailed procedure for screening and identification of sports talent Prediction of adult potentials at the young age.</p>	
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