



Jayoti Vidyapeeth Women's University **Jaipur (Rajasthan)**

Faculty of Physiotherapy & Diagnostics
Department of Physiotherapy

National Education Policy 2020

CURRICULUM FRAMEWORK FOR
TWO-YEAR POST GRADUATE PROGRAM IN PHYSIOTHERAPY

Program Name: MASTER OF PHYSIOTHERAPY (MPT)
Duration: 02 YEARS

With Effect from
Academic Session 2023-2024



National Educational Policy 2020:

The approval of the National Education Policy (NEP) by the Ministry of Human Resource Development, Government of India has been well deliberated the NEP is designed to contemplate the current skill requirements. The Indian education system with its earlier policies on education has greatly led to creation of fragmented system of education. However, bringing the whole system into one large umbrella remains a key issue. The current NEP has attempted to cure the same by getting rid of standalone institutions and institutions of affiliated nature and proposed formation and up gradation of institutions to offer multidisciplinary education. Multidisciplinary education system with inbuilt flexibility for both undergraduate as well as post graduate and research level is a key highlight of the NEP. It focuses on promoting and building vocational skills/skill enhancement courses, right from the school level, which can ease the burden on the employment opportunities and supply of proficient/talented workforce. As the experts rightly put it as the syllabi which academia develops should be student centric rather than teacher centric, which used to be so far. As already the Union Cabinet has approved the NEP 2020, it aims to pave way for transformational reforms in higher education systems in the country. This policy will replace the 34- year-old National Policy on Education (NPE), 1986.

Vision of the National Education Policy 2020

- An education system that contributes to an equitable and vibrant knowledge society, by providing high-quality education to all.
- Develops a deep sense of respect towards the fundamental rights, duties and Constitutional values, bonding with one's country, and a conscious awareness of one's role and responsibilities in a changing world.
- Instills skills, values, and dispositions that support responsible commitment to human rights, sustainable development and living, and global well-being, thereby reflecting a truly global citizen.

This National Education Policy 2020 is the first education policy of the 21st century and aims to address the many growing developmental aspirations of our country. This Policy proposes the revision and revamping of all aspects of the education structure, including its regulation and governance, to create a new system that is aligned with the aspirations & goals of 21st century education, including SDG4, while building upon India's traditions and value systems. NEP aims for India to have an education system by 2040 that is second to none, with equitable access to the highest-quality education for all learners regardless of social or economic background and seeks to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" by 2030." The whole of the NEP policy is a medication to cure the shortcomings in the education system for the last 35 to 36 years. The failure or success of the NEP will rely completely on the implementation and its acceptance by the stakeholders. For which we need to join hands in strengthening the system.



EXECUTIVE SUMMARY

Higher Education is a vital contributor for Economic Development of the nation. It plays a major role in improving human well-being and developing Indian Economy, since it serve as a center for developing ideas and innovations. The Sustainable Development Goal 4 (SDGs4) also advocates the quality of education, which seeks to “ensure inclusive and equitable quality education and promotes lifelong learning opportunities for all” by 2030 for Inclusive Economic Development. **Jayoti Vidyapeeth Women’s University, Jaipur** proposed an idea of developing a Curriculum Framework based on New Education Policy guidelines for both Undergraduate and Postgraduate programs across the faculty disciplines. Department of Physiotherapy has adopted the Curriculum Framework for Two-Year Post Graduate Program in Physiotherapy, Master of Physiotherapy (M.P.T) given by the NEP Curriculum.



Need for Curriculum Development

As per the National Education Policy initiatives, it is intended to formulate Curriculum to eliminate the disparities among the students studying in different Universities/Institutes. In addition to above the Members of the Committee also identified the need for the Development of Curriculum framework for Commerce Education:

1. **Indian Business Environment:** Due to LPG of Indian Economy, industry has undergone a lot of changes, growing MSME sector and Khadi & Village Industries, Non-profit and Social Enterprises, Emerging Entrepreneurship, State and Central Government initiatives, there are lot of opportunities for young people, the Curriculum helps the students to explore and utilize the opportunities created by the present business environment.
2. **Credit Disparities:** The Choice Based Credit System is not introduced in true sense as well there is credit disparity from one University to another/One Institute to another. To remove this credit disparities, which was burdening the students, Curriculum Framework is developed, which helps the BOS of the Universities/Institutes to develop their own Scheme of Teaching and Evaluation as per the Curriculum Credit Framework.
3. **Program Learning Outcomes (PLOs) and Sustainable Development Goals (SDGs):** In the New Curriculum, the courses would be mapped to identify their contribution towards PLOs and SDGs, which in turn help Universities/Institutes in their Accreditation and Ranking.
4. **Skill Development Courses:** The focus of existing Master Programs in Physiotherapy is less on skill development. The New Curriculum has given more emphasis for the skill development by considering the need of the Fourth Industrial Revolution components namely Automation, Digital platforms, AI, Block Chain Technology, IOT, Spread Sheet, Analytics etc., which enables the students to acquire the specialized skills and applied competencies in the field of Commerce and Business.
5. **Discipline Specific Electives:** The existing Programs in Physiotherapy in many Universities/Institutes have limited number of Discipline Specific Electives and these are almost like core courses, hence wider choice of elective courses are proposed to introduce in the New Curriculum Framework.
6. **Multidisciplinary Courses:** New Curriculum helps the students to choose the courses of their choice from other streams/across faculty. Therefore, students will be capable of making a positive contribution to Commerce, Trade and Industry in the national and global context by drawing the knowledge from the different disciplines, which is socially desirable.



Outcomes of the Program

In addition to Conventional Time-Tested Lecture Method, the Members of the Curriculum Development suggest the following approaches:

Programme Outcome:

At the end of the Master of Physiotherapy (MPT) Programme, graduates will be able to

- PO1** Recognize the role of Physiotherapy in the context of the health needs of the community and National priorities in the health sector.
- PO2** Demonstrate professional and ethical behavior appropriate to at least the minimum standard expected for a Physiotherapy Graduate.
- PO3** Ability to acquire knowledge on Basic Medical sciences, Human Movement Sciences, Various Medical Conditions and Surgical Treatments to identify Psychological, Social, Economical, Cultural aspects of diseases and its impact on community.
- PO4** Ability to perform a safe, systematic and appropriate physiotherapy assessment for various conditions.
- PO5** Identify, Define and Deal with problems of professional practice through logical, analytical and critical thinking.
- PO6** Ability to analyze and interpret physical assessment and diagnosis and set appropriate short and long term goals.
- PO7** Ability to choose, demonstrate intervention safely and document the progression appropriately.
- PO8** Communicate effectively across wide range of professional and personal contexts.
- PO9** An ability to work independently or collaboratively as a part of rehabilitation team.
- PO10** Ability to understand and conduct research activities.
- PO11** Engage in activities that contribute to the betterment of society and behave ethically and responsible in social environment.



Guidelines for Continuous Assessment and Semester End Examination

The Members of the BOS Committee deliberated on the framework of Continuous Assessment as well Semester End Examination for the courses. The CA and End Term Examination will carry 30% and 70% weight age each, to enable the course to be evaluated for a total of 100 marks, irrespective of its credits. The evaluation system of the course is comprehensive & continuous during the entire period of the Semester. For a course, the CA and End Term Examination will be on the following parameters:

Sr.No.	Parameters for the Evaluation	Marks
1.	Internal Assessment	15 Marks
2.	Continuous Assessment	15 Marks
2.	Semester End Examinations	70 Marks
	Total	100 Marks

Continuous Assessment: The CA will carry a maximum of 15% weight age (15 marks) of total marks of a course.

- i. Individual Assignments
 - ii. Seminars/Class Room Presentations/ Quizzes
 - iii. Group Discussions /Class Discussion/ Group Assignments
 - iv. Case studies/Case lets
 - v. Participatory & Industry-Integrated Learning/ Filed visits
 - vi. Practical activities / Problem Solving Exercises
 - vii. Participation in Seminars/ Academic Events/Symposia, etc.
 - viii. Mini Projects/Capstone Projects
 - ix. Any other academic activity
- b. Internal Assessment Tests :The test will carry a maximum of 15% weight age (15 marks) of total marks of a course, under this component,

(Internal Test followed by Continuous Assessment has to be conducted in a semester for 30 marks each and the same is to be scaled down to 30 marks. Standard format is given below.



Template for Internal Assessment Test

Internal Assessment Test Master of Physiotherapy (M.P.T)

Course Code:
Duration: 1 Hour

Name of the Course:
Total Marks: 30

SECTION-A

I. Answer any two of the following questions. Questions are asked on Remembering.
(4 x 2= 8)

- 1.
- 2.
- 3.

SECTION- B

II. Answer any two of the following questions. Questions are asked on Understanding and Applying.
(2 x5= 10)

- 4.
- 5.
- 6.

SECTION- C

III. Answer any one of the following questions. Questions are asked on analyzing and evaluating.
(1*12=12)

- 7.
 - 8.
-

II. Semester End Examination:

The Semester End Examination for all the courses for which students who get registered during the semester shall be conducted. End Term Examination of the course shall be conducted after fulfilling the minimum attendance requirement as per the University norms. **Jayoti Vidyapeeth Women's University** BOS Committee for M.P.T Has suggested the following Framework for End-Examination.



Proposed Model Question Paper for Semester End Examination
Semester M.P.T Examination, Month/Year(New
Syllabus 2023-24)

PHYSIOTHERAPY

Paper: _____

Time: 3 Hours

Max. Marks: 70

SECTION-A

1. Answer any Six of the following questions. Each Question Carries 2 Marks

(6x 3= 18)

- a.
- b.
- c.
- d.
- e.
- f.
- g.
- h.

SECTION- B

Answer any four of the following questions. Each question carries 4 marks

(4 x4= 16)

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

SECTION- C

Answer any three of the following questions. Each question carries 12 marks

(3x12=36)

- 7.
- 8.
- 9.
- 10.
- 11.



Learning Outcome Based Curriculum Framework

Programme Specific Outcome:

- PSO 1** Demonstrate sufficient understanding of knowledge in Physiotherapy.
- PSO 2** Able to integrate theoretical knowledge with clinical assessment.
- PSO 3** Develop the ability to collect history, perform relevant clinical assessment and frame appropriate electrotherapeutic and exercise therapy management for the patients.
- PSO 4** Demonstrate clinical decision making ability and provide appropriate patient care.
- PSO 5** Develop effective communication with patients, family, colleagues and students.
- PSO 6** Promote health education and improved quality of life through the practice of the profession.
- PSO 7** To carry out research and publications towards upliftment of the field of Physiotherapy.
- PSO 8** Actively engage in lifelong learning activities.
- PSO 9** Work effectively in various inter professional collaborative settings like hospitals, Rehabilitation Centers, Special Schools, Educational Institutions, Health and Fitness Centers, Geriatric Centers, Ergonomic Consultant in Corporate Sectors, Private Consultation, Home Care Services, Industrial Sectors, Sports Management, Fitness Consultant.



i. Generic Skills

The postgraduates will

PEO1 Post Graduates are prepared to be employed in industry, academia and research laboratories and by providing expected domain knowledge.

PEO2 Post Graduates are provided with practical training, hands-on and project experience to meet the industrial needs.

PEO3 Post Graduates are motivated in career and entrepreneurial skill development to become global leaders.

PEO4 Post Graduates are trained to demonstrate creativity, develop innovative ideas and to work in teams to accomplish a common goal.

PEO5 Post Graduates are addressed with social issues and guided to operate problems with solutions.

i. Post Graduate Attributes

Master of Physiotherapy graduates will have the following attributes and skills:

(A) Academically excellent

- (1) Analysis and evaluation of evidence in the physiotherapy disciplines in support of an argument, proposition or solution to problems in organizations and in society.
- (2) Strategic and critical thinking in relation to health and fitness- related issues.

(B) Research Skills

- (3) The retrieval of information from variety of health and ailment/medical sources.
- (4) Knowledgeable across disciplines with a kaleidoscopic view.
- (5) Synthesis of knowledge across disciplines.
- (6) Problem solving through the application of appropriate and relevant theories principles and data.
- (7) Skilled in the use of computer systems and software used in medical through practical assignments, exercises and demonstrations.



C) Attuned to cultural diversity

- (8) Aware of Cultural difference and able to account for these in developing solutions to health and fitness-related problems.

D) Active global citizens

- (9) Effective communicators on matters related to health and fitness.
- (10) Participants in discussion and debate on national and international issues related to the disciplines of the faculty.

E) Leaders in communities

- (11) Effective decision makes in health and fitness through meaningful and impactful community engagement practices.
- (12) Ethical and collegial in professional practice.



PROGRAM STRUCTURE

Teaching & Evaluation for M.P.T (Master of Physiotherapy) with Physiotherapy as Core subject

Sl. No.	NHEQF levels	Semester	Course Code	Title of the Course	Category of Courses	Teaching Hours per Week (L+T+P)	End Term	CA	Total Marks	Credits
1	07	I	UF-PT-135	Basic Sciences & Pathomechanics	Major	6+0+0	70	30	100	06
2	07	I	UF-PT-136	Physical & Functional Diagnosis	Major	6+0+0	70	30	100	06
3	07	I	UF-PT-137	Research Project - I	Minor	0+0+6	100	-	100	03
4	07	I	UF-PT-138	Practicum-I (Short & Long Cases)	Major	0+0+6	100	-	100	03
Sub-Total(A)							340	60	400	18

Sl. No.	NHEQF levels	Semester	Course Code	Title of the Course	Category Of Courses	Teaching Hours per Week (L+T+P)	End Term	CA	Total Marks	Credits
1	07	II	UF-PT-139	Physiotherapeutics	Major	6+0+0	70	30	100	06
2	07	II	Open Elective Subject (Specialization)		OEC	6+0+0	70	30	100	06
3	07	II	UF-PT-141	Research Project - II	Major	0+0+6	100	-	100	06
4	07	II	UF-PT-142	Practicum-II (Short & Long Cases)	Major	0+0+6	100	-	100	06
5	07	II	VAD-001	Cyber security	VAC	2+0+0	GRADE BASED			02
6	07	II	UMC-001	Women Rights & Law	UMC	2+0+0				02
7	07	II	ECA-001	Extracurricular activities	ECA	2+0+0				02
8	07	II	UMC-007	Community development activities	CDA	2+0+0				02
Sub-Total(A)							340	60	400	32



Sl. No.	NHEQF levels	Semester	Course Code	Title of the Course	Category of Courses	Teaching Hours per Week (L+T+P)	End Term	CA	Total Marks	Credits
1	07	III		Clinical Training & Thesis (Will be of Clinical Training and at the end of IV semester Thesis Submission, Viva, Training Certificate and Presentation)		0+0+36	100	-	100	36
Sub-Total(A)						0+0+36	100	-	100	36

Sl. No.	NHEQF levels	Semester	Course Code	Title of the Course	Category of Courses	Teaching Hours per Week (L+T+P)	End Term	CA	Total Marks	Credits
1	07	IV	UF-PT-144	Thesis Submission, Viva, Training Certificate and Presentation		0+0+36	100	-	100	36
2	07	IV	UMC-003	Help Aid	UMC	2+0+0			100	2
3	07	IV	ECA-001	Extracurricular activities	ECA	2+0+0			100	2
4	07	IV	UMC-007	Community development activities	CDA	2+0+0			100	2
Sub-Total(A)						6+0+36	100	-	400	24



Acronyms Expanded

- VAC : Value Added Course
- UMC : University Mission Course
- CC : Core Course
- SEC-SB/VB : Skill Enhancement Course-Skill Based/Value Based
- OEC : Open Elective Course
- DSE : Discipline Specific Elective
- L+T+P : Lecture+Tutorial+Practical(s)

Note: Practical Classes may be conducted in the Business Lab or in Computer Lab or in Class room depending on the requirement. 2 Hours of Practical Class is equal to 1 Hour of Teaching, however, whenever it is conducted for the entire class (i.e., more than 50 students) 2 Hours of Practical Class is equal to 2 Hours of Teaching.

List of MPT Open Electives (Dual Specializations)	
1	Neurology & Pediatrics (UF-PT-143)
2	Cardiopulmonary & Exercise Physiology (UF-PT-145)
3	Orthopedics & Manual Therapy (UF-PT-146)
4	Sports & Exercise Science (UF-PT-147)
5	Gynecology & Woman's Health (UF-PT-148)



First Semester Course Contents

Sl. No.	NHEQF levels	Semester	Course Code	Title of the Course	Category of Courses	Teaching Hours per Week (L+T+P)	End Term	CA	Total Marks	Credits
1	07	I	UF-PT-135	Basic Sciences & Pathomechanics	Major	6+0+0	70	30	100	06
2	07	I	UF-PT-136	Physical & Functional Diagnosis	Major	6+0+0	70	30	100	06
3	07	I	UF-PT-137	Research Project - I	Minor	0+0+6	100	-	100	03
4	07	I	UF-PT-138	Practicum-I (Short & Long Cases)	Major	0+0+6	100	-	100	03
Sub-Total(A)						12+0+12	340	60	400	20



Detailed Syllabus - 1st Semester

Credits= 06	Basic Sciences & Pathomechanics	6+0+0 Total Lectures: 90
Objective:	The objective of the course is to create awareness among the student about the Basic science and applied biomechanics of the human body.	
Unit 1	Concepts of teaching and learning – theories of teaching, relation between teaching and learning, dynamics of behaviour, learning perception, individual differences. Curriculum formation – committee framing, development & types of curriculum, formation of philosophy & course objectives, master plans of courses, co-relation of theory and practice.	18
Unit 2	Electrodiagnosis: Type of Nerve injury, Wallerian degeneration and regeneration. Electro diagnosis with therapeutic currents, – S.D. curves for motor, sensory and Pain assessment. Applied Electrotherapy -1) instruments 2) electrodes used in EMG -3) E.M.G. normal (at rest & Activity) and abnormal. Application of nerve conduction studies 1) Sensory /Motor 2) “F” Wave, 3)“H” reflex, 4) Blink reflex, 5) SSEP . Application in Neuro-muscular junction disorders, repetitive nerve stimulation. Motor unit potential diseases (Dystrophies, myopathy, myotonia). Evoked potentials SSEP.	18
Unit 3	Applied mechanics in the evaluation procedures – movement & functional analysis. Gravity, balance & equilibrium. Kinetics / Kinematics of extremity and spinal joints, (including T.M. joint), Posture gait jogging, running, climbing up/down, A.D.L & exercises.	18
Unit 4	Applied mechanics in physiological & pathological deviations (pathomechanics / Patho kinetics) of spinal & extremity disorders (functional & static). Applied mechanics in exercise prescription with clinical reasoning.	18
Unit 5	Biophysics of connective tissue – ligament, Cartilage, tendon, muscle, neural tissues & vessels, – Response to mechanical loading. Biomechanics of respiration & circulation.	18
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the concepts of applied biomechanics and electrotherapy.	
3	To understand the clinical concepts.	
Text Books:		
1	Pedagogy Physiotherapy Education –C S Ram	
2	Clinical Electrophysiology - Robinson	
Reference Books:		
1	Joint Structure and Function- Levangie Pamela K	



Credits=06	Physical & Functional Diagnosis	6+0+0 Total Lectures: 90
Objective:	The objective of the course is to create awareness among the student about the various Manipulative Skills as well as clinical reasoning.	
Unit 1	Clinical Reasoning, Assessment and Diagnosis. Articular Neuro Physiology and principles of applications.	20
Unit 2	Terminology, Principles, indications, contraindications, assessment & methods of application of – Maitland, Karltenborn, Cyriax, Mulligan Mackenzie, Butler's Neural Mobilisation. Shacklok neural tissue mobilization.	20
Unit 3	History of manual therapy, overview of manual therapy approaches or all the joints. Terminology, Principles, indications, contraindications, assessment & methods of application of Soft tissue approaches – Myofascial techniques, Neural tissue Mobilization, Muscle Energy Techniques, High velocity thrust techniques, Positional Release Techniques, Trigger point release, Lymphatic Manipulation.	40
Unit 4	Posture and its various deformities.	10
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Acquire the knowledge and skill of various approaches of Manual therapy for joints of the limbs/spine.	
3	Be able to integrate the manual therapies to rehabilitate the Mechanical Neuro. Muscular problems.	
Text Books:		
1	Clinical Manual Therapy & Practice – Leon Chaitow	
2	Manual of Combined Movement - Edwards	
Reference Books:		
1	Manual Therapy Masterclass – Karem S Beeton	



Second Semester Course Contents

Sl. No.	NHEQF levels	Semester	Course Code	Title of the Course	Category Of Courses	Teaching Hours per Week (L+T+P)	End Term	CA	Total Marks	Credits
1	07	II	UF-PT-139	Physiotherapeutics	Major	6+0+0	70	30	100	06
2	07	II	Open Elective Subject (Specialization)		OEC	6+0+0	70	30	100	06
3	07	II	UF-PT-141	Research Project - II	Major	0+0+6	100		100	03
4	07	II	UF-PT-142	Practicum-II (Short & Long Cases)	Major	0+0+6	100		100	03
5	07	II	VAD-001	Cyber security	VAC	2+0+0	50		50	02
6	07	II	UMC-001	Women Rights & Law	UMC	2+0+0			100	02
7	07	II	ECA-001	Extracurricular activities	ECA	2+0+0			100	02
8	07	II	UMC-007	Community development activities	CDA	2+0+0			100	02
			Sub-Total(A)			14+0+12	390	60	750	26



Detailed Syllabus – 2nd Semester

Credits= 06	Physiotherapeutics	6+0+0 Total Lectures: 90
Objective:	The objective of the course is to create awareness among the student about the Therapeutic and Physiotherapeutic aspects.	
Unit 1	Image Interpretation: History, A New Kind of Ray, How a Medical Image Helps, What Imaging Studies Reveal, Radiography (x-rays), Computed Tomography (CT), Magnetic Resonance Imaging (MRI), Sonography.	30
Unit 2	Radiography: Interpretation of X-ray films, MRI, CT scan and ultrasound in common conditions.	10
Unit 3	Exercise And Environment: Acclimatization, Exercising at high and low altitude and hypoxia, Exercise at hot climate, thermoregulations, dehydration and rehydration. Exercise at cold climate. FATIGUE- Classification, physiology, Assessment and management.	30
Unit 4	Palpation techniques of the common joints and muscles.	20
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the concepts of radiology.	
3	To understand the clinical interpretation.	
Text Books:		
1	Physiology of Sports & Exercise - Wilmore	
2	Grainger & Allison, 2016, Diagnostic Radiology, Vol. 1 and 2, 6th Edition, Elsevier Publications.	
Reference Books:		
1	Curry, 1990, Christensen's Physics of Diagnostic Radiology, 4th Edition, Wolters Kluwer India Pvt. Ltd	



Credits= 06	Open Elective Subject (Neurology & Pediatrics)	6+0+0 Total Lectures: 90
Objective:	The objective of the course is to create awareness among the student about the Neuro-pediatrics rehabilitation.	
Unit 1	General Assessment and Examination of Neurological, psychiatric and paediatric conditions. Radiographic Interpretations.	18
Unit 2	Degeneration Diseases of Nervous system - Parkinson Diseases, Motor Neuron disease Amyotrophic lateral sclerosis, Progressive bulbar palsy, progressive muscular atrophy. Stroke- Focal, multiple focal, lacunar infarcts, gross infarct, degradation of Brain. Cerebral palsy -assessment & management with approaches, roods, vojta, sensory integration, N.D.T, Temple Fay.	18
Unit 3	Basic and Applied NeuroAnatomy, Reflex & reactions, Motor development - theories, developmental sequence, movement in infants, Motor control, Motor learning – principles, factors affecting motor learning, theories. Cognitive and perceptual dysfunction – learning disabilities, attention deficit, hyperactivedisorder, autism.	18
Unit 4	Disorder of spinal cord- Compression of spinal cord, spinal cord tumors, neoplasm of vertebral column, IVDP, Extradural & Epidural Abscess, Syringomyelia, Syringobulbia, Transverse Myelitis. Cranio-vertebral function Anomalies – Soft tissue anomalies, Bony Anomalies. Head injury – Hemorrhage, Haematoma, Aneurismal rupture.	18
Unit 5	Amputation and Limb deficiencies in childhood. Burns in childhood – Classification, Pathophysiology and Management. Common Neurological and Paediatrics assessment Scales.	18
Course Outcome: The student will:		
1	Asses and diagnose all possible findings on the patient to plan a Rehabilitation programme.	
2	Understanding the concepts of Neurologic and paediatric conditions	
3	Be able to impart knowledge for training the under graduate students.	
Text Books:		
1	Brooks, V.B. The Neural Basis of Motor Control, Oxford University press 1986. Clinics in Physical Therapy series.	
2	Campbell S (2000) Physical Therapy for Children. W B Saunders Co.	
Reference Books:		
1	Connelly B.H. and Montgomery, P.C. Therapeutic exercise in developmental disabilities, Chattanooga 1987.	



Credits= 06	Open Elective Subject (Cardiopulmonary & Exercise Physiology)	6+0+0 Total Lectures: 90
Objective:	The objective of the course is to create awareness among the student about the Cardiopulmonary and Exercise physiology.	
Unit 1	Evaluation and assessment of Cardiovascular system and Pulmonary system. Common assessment scales, Evaluation and interpretation- PFT, ECG, EEG, Chest Radiography, Various methods of fitness and exercise testing.	18
Unit 2	Assessment and Management of Respiratory muscles, respiratory muscle fatigue, respiratory muscle fatigue in disease. Cough reflex, Paediatric lung, Breathing techniques, IPPB, ACBT, PD, AD. Bronchial Hygiene - Humidification, nebulization, aerosol therapy, suctioning. Artificial Ventilation - Mechanical Ventilation, tracheostomy, manual hyperinflation. Children with respiratory dysfunction.	18
Unit 3	COPD, Asthma, Cystic Fibrosis, Immunological deficits, Pertusis. Adult COPD- Causes, pathomechanics, presentation, evaluation, investigation, management, rehabilitation. Restrictive lung disorders- Causes, pathomechanics, presentation, evaluation, investigation, management, rehabilitation. Infective lung diseases- Causes, pathomechanics, presentation, evaluation, investigation, management, rehabilitation.	18
Unit 4	EXERCISE PERFORMANCE: Lung function and its role in exercise performance Regulation of ventilation & blood pressure during exercise. Cardiovascular adjustment during exercise. Muscle fiber, types and its role in exercise performance. Ventilation during steady and non-steady rate exercise. Energy cost and breaking. Blood pressure (BP) response to exercise. Cardiac output during exercise in - trained untrained. Cardio vascular drift.	18
Unit 5	ENERGY PRODUCTION, EXPENDITURE, AND TRANSFER: Energy transfer in cells during exercise. Oxygen metabolism and transfer during metabolism. Oxygen transport in blood. Oxygen deficit, Oxygen debt. Oxygen measurement, Oxygen during exercise, Oxygen during recovery. Energy release from carbohydrate, lipids and proteins. BMR - during rest, at activity. Energy expenditure during activity. Short Term and Long term energy systems. AEROBIC AND ANAEROBIC EXERCISES: Aerobic and anaerobic training, Overtraining, Strength training-physiology in various age groups, Methods of training, Circuit training & De-training, DOMS. Aid in enhancing training and performance.	18
Course Outcome: The student will:		
1	Be able to identify, discuss & analyse, the Various cardio-respiratory dysfunction & co- relate the same with the provisional diagnosis, routine radiological & Electro- physiological investigations and arrive at appropriate functional diagnosis with clinical reasoning.	
2	Use recent Technique/ approaches to treat & train patients with cardio-respiratory dysfunction in children, adults & geriatrics.	
3	Be able to impart knowledge for training the under graduate students.	
Text Books:		
1	Cardiopulmonary symptoms in physiotherapy - Cohen M. Churchill, Livingstone, London 1988.	
2	Cardiopulmonary Physiotherapy - Irwin, C.V. Mosby, St. Louis 1990.	
Reference Books:		
1	Webber B and Pryor J (1993) Physiotherapy for respiratory and cardiac problems. Churchill Livingstone, London. ISBN 0-443-04471-6	



Credits=06	Open Elective Subject (Orthopedics & Manual Therapy)	6+0+0 Total Lectures: 90
Objective:	The objective of the course is to create awareness among the student about the Musculoskeletal system and Manual Therapy.	
Unit 1	Introduction To Orthopaedics – Assessment & Evaluation in detail related to orthopaedic patient history taking, clinical features, clinical examination and investigation, clinical reasoning and common scales used in assessment.	18
Unit 2	Home program and counselling for care givers, Ergonomics in musculoskeletal dysfunction, Pilates, PNF techniques, Swiss ball therapy, Blood Flow Restriction (BFR), Plyometrics.	18
Unit 3	Terminology, Principles, indications, contraindications, assessment & methods of application of – Maitland, Kaltenborn, Cyriax, Mulligan Mackenzie, Butler’s Neural Mobilisation. Shacklock neural tissue mobilization. Myofascial release, Neural Mobilization.	18
Unit 4	Rehabilitation Protocol and pathomechanics of common musculoskeletal conditions of Spine, Upper and Lower Limb including fractures.	18
Unit 5	Rigid and Kinesio Taping	18
Course Outcome: The student will:		
1	Be able to identify, discuss & analyse, the Musculo skeletal dysfunction in terms of Biomechanical, Kinesiological and Biophysical basis & co-relate the same with the provisional diagnosis, routine radiological & Electro-physiological investigations and arrive at appropriate functional diagnosis with clinical reasoning.	
2	Use recent Technique/ approaches to treat & train patients with musculo-skeletal deficit in children, adults & geriatrics.	
3	Be able to impart knowledge for training the under graduate students.	
Text Books:		
1	Kase Kenzo, 2003, Illustrated Kinesio Taping, 4th Edition, Ken I Kai Information.	
2	Black d and Dumbleton J. H. clinical Biomechanics 2nd edn. Churchill Livingstone 1987.	
Reference Books:		
1	Donatelli R. and wooden M.J. Ed Orthopaedic Physical Therapy Churchill, Livingston 1989.	



Credits=06	Open Elective Subject (Sports & Exercise Science)	6+0+0 Total Lectures: 90
Objective:	The objective of the course is to create awareness among the student about the Sports physiotherapy and exercise science.	
Unit 1	Evaluation and assessment of Sports Injuries.	18
Unit 2	Biomechanics of sports activities & its relation to injuries in – tennis, golf, cricket, volleyball, soccer, basketball, short & long distant runners, swimming, throwing events, jump events, pathomechanics of injuries (pattern, velocity, angular & linear movements), Warm up , Cool down.	18
Unit 3	Sports injuries - emergency sports injury assessment; mechanism, patho-mechanism, clinical presentation, assessment & examination of shoulder girdle injuries, elbow joint injuries, wrist & hand injuries, thigh injuries, knee injuries, injuries of patella, injuries to ankle & foot, injuries to cervical spine & skull, injuries to thoracic spine & thoracic cage, injuries to lumbo-sacral region, athletic injuries, swimming injuries, abdominal injuries.	18
Unit 4	Radio-imaging in sports – X-Ray, CT, MRI, Ultrasonography. Ground evaluation, Evaluation of paediatric fitness & paediatric injuries, Evaluation of injuries of old age, Specific sports injuries in women, Pathophysiology & assessment of fatigue, Drugs in sports.	18
Unit 5	Sports specific training. & Cross training. Risk factors in sports injuries and strategies of prevention. Manual therapy in sports. Therapeutic exercises - Strength training, power training, Flexibility training, endurance training, Plyometrics, Reaction training, Proprioceptive training, Stretching. Sports massage, Trigger point release, neural tissue mobilization. Core Stability assessment & Training. Pilates, Swiss Ball training, Sports taping, Electrotherapy in sports injuries. Hydrotherapy.	18
Course Outcome: The student will:		
1	Understand the psychosocial factors, environmental factors & individual factors affecting the performance.	
2	Guide participants for a confident sports activity & rehabilitation to attain maximal achievement.	
3	Understand the role of Sports physiotherapist in the team.	
Text Books:		
1	Bird, S. R., Black, N. Sports Injuries: Causes, Diagnosis, Treatment and Prevention Cheltenham: Stanley Thomes, 1997 ISBN: 0748731814	
2	Cash M. Sport and Remedial Massage Therapy London: Edbury, 1996 ISBN: 0091809568	
Reference Books:		
1	Brownstein, B. Functional movement in Orthopaedic and Sports Physical Therapy: Evaluation, Treatment and Outcomes, New York; London: Churchill Livingstone, 1997 ISBN: 0443075301	



Credits= 06	Open Elective Subject (Gynecology & Women's Health)	6+0+0 Total Lectures: 90
Objective:	The objective of the course is to create awareness among the student about the Gynecology and women's health.	
Unit 1	Anatomy and physiology: of the female reproductive organs. Puberty dynamics, Physiology of menstrual cycle-ovulation cycle, uterine cycle, Cx cycle, duration, amount, Hormonal regulation of menstruation.	25
Unit 2	Principle of common gynaecological operations-hysterectomy, D&C, D&E, Pap smear, Menopause: Its effect on emotions and musculoskeletal system, Urogenital dysfunction – pre and post-natal condition, Sterility: Pathophysiology, investigations, management, Malnutrition and deficiencies in females. Post surgical rehabilitation of common gynaecological surgeries and complications, Urinary Incontinence etc.	25
Unit 3	Gynaecological assessment and evaluation, Applied anatomy and biomechanics of pelvic floor muscles and joints. Common scales used in assessment. Posture assessment and its management.	25
Unit 4	MFR, Pilates, PNF, Kinesio Taping-Women's health and common gynaecological conditions, Methods and exercises for pelvic floor muscles strengthening, Manual Therapy. Pre and Post Pregnancy Rehabilitation protocol	15
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Use recent Technique/ approaches to treat & train patients with gynaecological issues.	
3	Be able to impart knowledge for training the under graduate students.	
Text Books:		
1	Polden M, 1990, Physiotherapy in Obstetrics and Gynaecology, 1st Edition, Butterworth-Heinemann Ltd	
2	Madhuri GB, 2007, Textbook of Physiotherapy for Obstetrics and Gynecological Conditions, 1st Edition, Jaypee Brothers Medical Publishers	
Reference Books:		
1	Konar Hiralal, 2020, DC Dutta's Textbook of Gynaecology, 8th Edition, Jaypee Brothers Medical Publishers	



Credits= 2	Cyber Security	2+0+0 Total Lectures:
Objective:	The paper aims at creating awareness as to importance and role of cyber security.	
1	Introduction to Security and types of security	
2	Principals of Information Security	
3	Browser Application Security, Configuring Chrome, Mozilla, Internet Explorer Security Settings	
4	Phishing, Avoidance of phishing scams, Protection of Phishing Scam, Identify	
5	Theft Awareness, Password Security, Safe social networking, Secure Online Shopping(Physically and No Physically	
6	Securing your Emails, Anti-virus, firewall and anti-spyware software	
7	Back up your Data, Removable Media Security, Handheld device security.	
8	Reviewing the concept Internet Ethics	
9	Unethical behavior in Internet & Examples, (a) Using of computer resources improperly	
10	Using computers, data, information to harm others Using Internet	
11	one shall not forward false communication	
12	Acceptable behavior	
13	While using e-Mail and chatting, (b)Pretending someone else	
14	Avoid Bad Language	
15	Internet Ethics: Internet: Reviewing the concept Internet Ethics	
16	Unethical behavior in Internet & Examples, (a) Using of computer resources improperly	
17	Using computers, data, information to harm others (c) Using Internet, one shall not forward false communication	
18	Acceptable behavior: (a) While using e-Mail and chatting, (b)Pretending someone else,	
19	Avoid Bad Language, Cyber Ethics, What is Cyber Security	
20	What is Cyber safety, Difference between cyber safety and cyber security?	
21	Introduction to Cyber bullying	
22	Risk factors, Signs for Cyber bullying	
23	how to Prevent Cyber bullying, Guidelines for Cyber bullying	
24	Role of Electronics and Digital Signature	
25	Information Security Policies and Case Studies	
26	Cyber Security Law	



27	Introduction to Cyber Laws	
28	Classification of Cyber Crimes	
29	Importance of cyber laws	
30	Scope of cyber security	



Credits= 2	Women Rights and Law	2+0+0 Total Lectures:
Objective:	The paper aims at creating awareness as to importance and role of women in society through the medium of law. It also focuses on women welfare laws.	
1	Introduction of Women Rights And Law: Definition of women, awareness about women rights, appeal for remedies	
2	Global Status of Women: Civil and Political Rights ii. Social and Cultural rights, Participation in Panchayat and Municipalities,	
3	Rights and awareness of marriage and divorce : Marriage Conditions, Ceremonies, Registration, ,Void & Voidable Marriages, Legitimacy of Children of Void & Voidable Marriages, Punishment of Bigamy	
4	Divorce: Divorce Common Grounds for Divorce, No Petition for divorce within 1year of marriage, Divorced Person when may marry again	
5	Rights on maintenance: Maintenance: Wife, widowed daughter-in-law, Children, Amount of Maintenance , Interim Maintenance, Maintenance Provisions under Cr.PC,	
6	Rights of Adoption: Adoption: Requisites of a valid adoption,Capacity of a male Hindu to take in adoption, Capacity of a female Hindu to take in adoption	
7	Persons capable of giving in adoption, Persons who may be adopted, Effects of Adoption,.	
8	Rights of private defence: Right of Private defence for body and property	
9	Crime against women: Dowry Death, Cruelty by Husband or Relatives of Husband, Sex Selection & Causing Miscarriage, Outraging the modesty of a woman, Offences regarding Prostitution, Rape, Bigamy, Adultery, Domestic Violence,	
10	Sexual harassment of women: Sexual harassment in home, society and work place	
11	Medical termination Pregnancy act 1971: Liberalizing the provisions relating to abortion	
12	The Pre-Conception and Pre-Natal Diagnostic Techniques Act, 1994: Pre-Natal Diagnostics test and oath	
13	Surrogacy : Commercial Surrogacy in India & its regulation,	
14	Women empowerment: Role of Enforcement Machineries (Reform through judicious interventions)	
15	Role for national women commission for women	



Forth Semester Course Contents

Sl. No.	NHEQF levels	Semester	Course Code	Title of the Course	Category of Courses	Teaching Hours per Week (L+T+P)	End Term	CA	Total Marks	Credits
1	07	IV	UF-PT-144	Thesis Submission, Viva, Training Certificate and Presentation		0+0+36	100	-	100	18
2	07	IV	UMC-003	Help Aid	UMC	2+0+0			100	2
3	07	IV	ECA-001	Extracurricular activities	ECA	2+0+0			100	2
4	07	IV	UMC-007	Community development activities	CDA	2+0+0			100	2
				Sub-Total(A)		6+0+36	100	-	400	24



Credits= 02	Help Aid	2+0+0 Total Lectures:
Objective:	To provide the citizen responder with the knowledge and skills necessary in an emergency to help sustain life, reduce pain, and minimize the consequences of injury or sudden illness until professional medical help arrives.	
1	Introduction- How it is related with UMC	Theory- 15 Min
2	First aid kit & An emergency health information card	Theory: 45 Min. Practical: 1Hr Practice: 1 Hr
3	Help Aid In Burns	Theory: 1 Hr Practical: 1Hr Practice: 1 Hr
4	Help Aid in Poisoning and Insect Bit	Theory: 1 Hr Practical: 1Hr Practice: 1 Hr
5	Help Aid In Injuries	Theory: 1 Hr Practical: 1Hr Practice: 1 Hr
6	First Aid for Respiratory, diabetic emergencies	Theory: 1 Hr Practical: 1Hr Practice: 1 Hr
7	Help Aid In Female First aid for Dehydration	Theory: 1 Hr Practical: 1Hr Practice: 1 Hr
8	Help Aid in Cardio-vascular Emergencies	Theory: 1 Hr Practical: 1Hr Practice: 1 Hr
9	First Aid for Infants	Theory: 1 Hr Practical: 1Hr Practice: 1 Hr
10	Help Aid in geriatric care	Theory: 1 Hr Practical: 1Hr Practice: 1 Hr
11	First Aid for central nervous system emergencies.	Theory: 45 Min. Practical: 1Hr Practice: 1 Hr
12	Implementation of Help-Aid to serve society	Theory- 15 Min