Ordinance & Syllabus
For
M.P.T.
academic programme

Duration :
2 years

Master of Physiotherapy
(M.P.T.)

ORDINANCE

Chapter
"A"

1. M.P.T. degree will be under the **faculty of Medicine** of C.S.J.M. University, Kanpur in the department of physiotherapy.
2. **Duration of Course :**
   - MPT course will be a full time course.
   - Duration will be two years.
   - The pattern of this course shall be annual. This course shall be divided into two professional examinations namely MPT-1st Year at the end of first academic year, MPT -2nd year at the end of second academic year.

3. **Specialization/Discipline:**
   There shall be following specialization/discipline:
   - **MPT in Orthopaedics**
   - **MPT in Neurology**
   - **MPT in Cardiopulmonary Disorders**
   - **MPT in Sports**

   MPT Degree will be awarded as per the specialization/discipline of the student passed.

4. **No. of Seats:**
   There shall be 05 seats in each specialization/discipline. Total no. of seats will be 5x4 = 20.

5. **Admission.**

   Eligibility Criteria:
   The students who have passed BPT (Bachelor of Physiotherapy) Course from any recognized Institutions/University with minimum of 55% marks (50% for SC/ST)

   Mode of Admission:
   The candidates for admission to this course shall be selected through an entrance test conducted by the University or on the basis of merit of marks in BPT or as per the rule decided by the CSJM University time to time.

6. **Medium of instruction :**
   English shall be the medium of instruction in the class and in the University examination.

7. This Course shall be run under **self finance scheme**.

8. Method of Teaching/Training:

The method of teaching adopted shall be a combination of lectures, demonstrations and practicals by the full time faculty, visiting or part time or guest faculty. Training should include involvement in clinics, laboratory, experimental work and research studies.

Student admitted in this course should take part in seminars, group discussion, clinical rounds, core demonstrations, journal review/meeting (Journal Club) and other continuing education programme, workshop, under graduate teaching activities and community work etc.

9. Course of Study

There are four specialization/discipline in MPT Course

1. Orthopaedics
2. Neurology
3. Cardiopulmonary Disorders
4. Sports

Subjects in the first year shall be common to all the four specialization/discipline. In the second year the student will study the subject of his/her specialization/discipline. They will appear in the examination accordingly.

M.P.T. Part-I (First Year) (Common to all specialization/ Discipline)

S. No.	Subjects	Subject code	Total Teaching Hours
1.	Review of Basic Physiotherapeutics	MPT-101	180
2.	Advanced Physiotherapeutics	MPT-102	180
3.	Research Methodology & Biostatics	MPT-103	100
4.	Practical	MPT-104	200
5.	Dissertation	-	-
6.	Clinical Practices*	-	440
7.	Teaching Skills/ Seminars/Symposia/Journal Club etc.*	-	260
		Total Hours	1360

*** Not included in University Exam**

M.P.T. Part-II (Second Year)
(Orthopaedics)

S. No.	Subjects	Subject code	Total Teaching Hours
1.	Pedagogy in Physiotherapy Education	MPT-201	100
2.	Administration, Management & Ethical Issues	MPT-202	100
3.	Orthopaedic Disorders & Management –I	MPT-203O	180
4.	Orthopaedic Disorders & Management –II	MPT-204O	180
5.	Practical	MPT-205	200
6.	Dissertation	MPT-206	
7.	Clinical Practices*	-	440
8.	Teaching Skills/ Seminars/Symposia/Journal Club etc.*	-	260
		Total Hours	1460

*** Not included in University Exam**

M.P.T. Part-II (Second Year)
(Neurology)

S. No.	Subjects	Subject code	Total Teaching Hour
1.	Pedagogy in Physiotherapy Education	MPT-201	100
2.	Administration, Management & Ethical Issues	MPT-202	100
3.	Neurological Disorders & Management –I	MPT-203N	180
4.	Neurological Disorders & Management –II	MPT-204N	180
5.	Practical	MPT-205	200
6.	Dissertation	MPT-206	-
7.	Clinical Practice*	-	440
8.	Teaching Skills/ Seminars/Symposia/Journal Club etc.*	-	260
		Total Hours	1460

*** Not included in University Exam**

M.P.T. Part-II (Second Year)
(Cardiopulmonary Disorders)

S. No.	Subjects	Subject code	Total Teaching Hour
1.	Pedagogy in Physiotherapy Education	MPT-201	100
2.	Administration, Management & Ethical Issues	MPT-202	100
3.	Cardiology Disorders & Management –I	MPT-203C	180
4.	Cardiology Disorders & Management –II	MPT-204C	180
5.	Practical	MPT-205	200
6.	Dissertation	MPT-206	-
7.	Clinical Practice*	-	440
8.	Teaching Skills/ Seminars/Symposia/Journal Club etc.*		260
		Total Hours	1460

*** Not included in University Exam**

M.P.T. Part-II (Second Year)
(Sports)

S. No.	Subjects	Subject code	Total Teaching Hours
1.	Pedagogy in Physiotherapy Education	MPT-201	100
2.	Administration, Management & Ethical Issues	MPT-202	100
3.	Traumatology & Medical Conditions	MPT-203S	180
4.	Fundamental in sports & Rehabilitation	MPT-204S	180
5.	Practical	MPT-205	200
6.	Dissertation	MPT-206	
7.	Clinical Practice*	-	440
8.	Teaching Skills/ Seminars/Symposia/Journal Club etc.*		260
		Total Hours	1460

*** Not included in University Exam**

10. Attendance to appear in the annual University examination :

The permission to appear in annual examination shall be granted to such candidate only who have fulfill the condition of 75% attendance in each subject separately in theory and practical as per the university rule.

Regarding attendance requirements students will have to fulfill the condition of 75% attendance. 15% relaxation in attendance, in exceptional circumstances can be made by the

Vice Chancellor on the recommendation of the Director/Coordinator/Head of the Institute/Department.

11. Monitoring Progress of Studies

It is essential to monitor the learning progress of each candidate through continuous appraisal and regular internal assessment. It not only also helps teachers to evaluate students, but also students to evaluate themselves. The monitoring be done by the faculty members of the department based on participation of students in various teaching / learning activities.

(a) Seminar

- Seminars /recent advance presentation will be held every week, however, its timings are subject to clinical schedule. Topics must be well researched and must include common knowledge, recent advances, analysis and references.
- PG students should present minimum of two seminars (One in general and one in elective area) and Internal Assessment marks will depend on better topic selection and presentation.

(b) Case Presentation

- PG students are expected to do at least one case presentation per month. They can choose the patient depending on the availability of cases. However, appropriateness should be confirmed with concern teacher.
- If the first presentation is unsatisfactory, students can do one more case presentation in the same posting for the improvement of the internal assessment.

(c) Clinical Practices

Post graduate students must know :

- Assessment, evaluation and diagnosis.
- Practice and application of physiotherapeutic system in hospital/ institution.
- Application of advance physiotherapeutic maneuvers like manipulation and various neurological interventional concepts.
- Clinical reasoning, decision making, evidence based practice and recording system.

(d) Teaching Skills

Candidates should be encouraged to teach undergraduate students if any. This performance will be based on assessment by the faculty members of the department and from feedback from the undergraduate students.

(e) Journal Review Meeting (Journal Club):

The ability to do literature search, in depth study, presentation skills, and use of audio-visual aids are to be assessed. The assessment is made by faculty members and peers attending the meeting.

(f) Work diary / Log Book

Every student shall maintain a work diary and record his/her participation in the training programmes conducted by the department such as journal reviews, seminars, etc. Special mention may be made of the presentations by the candidate as well as details of clinical practice, if any conducted by the candidate by the student.

(g) Mid Term Examination/Class Test/Assignments

There will be half yearly examination on the students of every academic year. Various class test may be taken by the department and assignments may be given to students on various topics. Marks of half yearly examination will be included in internal assessment.

(h) Records

Records, log books and marks obtained in half year exam/tests will be maintained by the Head of the Department and will be made available to the University.

12. Dissertation:

Every candidate pursing MPT degree course is required to carry out research work on a selected research project under the guidance of a recognized postgraduate teacher. The results of such a work shall be submitted in the form of dissertation. Topic for dissertation shall be assigned by the guide.

Fulltime recognized PG Teacher/Guide from other institute can act only as a co-guide, If the subject of Thesis entails collaboration with other departments or specialties, the collaborative portion of the work will be supervised by Co-Guide, designated by the University Institute of Health Sciences in consultation with the Guide. Where a Co-Guide is involved, the Thesis will be certified jointly by the Guide & Co-guide.

Every candidate shall submit synopsis to the University in the prescribed Performa containing particulars of proposed dissertation work, within 6 months from the date of commencement of the course on or before the dates notified by the university. The synopsis shall be sent through the proper channel. Such synopsis will be reviewed and the university will register the dissertation topic.

No change in the dissertation topic or guide shall be made without prior approval of the university. Guide will be only a facilitator, advisor of the concept and hold responsible in correctly directing the candidate in the methodology and not responsible for the outcome and results.

The dissertation should be written under the following headings.

1. Introduction
2. Aims or objectives of study
3. Review of literature
4. Material and methods
5. Results
6. Discussion
7. Conclusion
8. References
9. Master and Chart & Table (If Applicable)
10. Annexure (If Applicable)

The written text of dissertation/ research project shall not be less than 50 pages and shall not exceed 120 pages excluding references, tables, questionnaires and other annexure. It should be neatly typed in double line spacing on one side of bond paper (A4 size, 8.27" x 11.69") and bound properly. Spiral binding should be avoided. A declaration by the candidate for having done the work himself should also be included, and the guide, head of the department and Director/Coordinator of the institute shall certify the dissertation/ research project.

Every candidate is required to give power point presentation before final submission of dissertation. Four copies of Dissertation/research project shall be submitted to the university, through proper channel, along with a soft copy (CD), 6 months before the final examination. It shall be assessed by two examiners appointed by the university, one internal and one external. There will be a power point open presentation of the submitted dissertation as per the schedule given by the university. This presentation shall be jointly evaluated by external and internal examiner as per the criteria given below:

Objective(s) of the work done	50 Marks
Methodology adopted	100 Marks
Result and Discussion	100 Marks
Conclusion & outcome	50 Marks
Total	**300 Marks**

To pass in the dissertation a student must secure 150 marks.
If the student failed to secure the minimum passing marks he will resubmit the dissertation 1½ month before the supplementary exam.

13. Guide:

I. Eligibility for guide for each specialty

(a) Full time faculty involved in teaching in the same department/institute.
(b) Minimum MPT with 5 years teaching experience in related subject as a full time faculty.

The Vice Chancellor of the University can appoint a person as a guide whom he/she considers suitable.

II. Age of Guide

The age of guide should not exceed 62 years or as per university norms.

III. Guide student ratio

1: 5

A recognized guide shall supervise dissertation work of not more than 5 students per academic year.

IV. Change of Guide

In the event of registered guide leaving the department/institute or in the event of death of guide, guide may be change with prior permission from the university.

14. Examination :

There shall be an annual University examination at the end of each academic year in the form of theory papers examination and practical examinations. The candidate shall be required to appear in every subject as specified in the course structure for each year.

Duration of Examination :

Each theory paper examination shall be of three hours duration.

Examiners :

The board of examiners for theory papers examination shall consist of 50% internal and 50% external examiners and for practical examination there should be one external

examiner and one internal examiner (of the institute). All examiners shall be decided by honorable Vice Chancellor of the University.

Evaluation :
The answer books of the annual University examination shall be evaluated as per the university rules.

"B"
Regulations : Scheme of Examination

M.P.T. Part-I (First Year) University Examination (Common to all specialization/ Discipline)

S. No.	Subjects	Subject code	THEORY MARKS				PRACTICAL MARKS				Total marks
			Theory Paper	Internal Assessment	Total	Minimum marks	Practical	Internal Assessment	Total	Minimum Marks	
1.	Review of Basic Physiotherapeutics	MPT-101	80	20	100	50	-	-	-	-	100
2.	Advanced Physiotherapeutics	MPT-102	80	20	100	50	-	-	-	-	100
3.	Research Methodology & Biostatics	MPT-103	80	20	100	50	-	-	-	-	100
4.	Practical	MPT-104	-	-	-	-	160	40	200	100	200
										Grand Total	500

M.P.T. Part-II (Second Year) University Examination (Orthopaedics)

S. No.	Subjects	Subject code	THEORY MARKS				PRACTICAL MARKS				Total marks
			Theory Paper	Internal Assessment	Total	Minimum marks	Practical	Internal Assessment	Total	Minimum Marks	
1	Pedagogy in Physiotherapy Education	MPT-201	80	20	100	50					100
2	Administration, Management & Ethical Issues	MPT-202	80	20	100	50	-	-	-	-	100
3	Orthopaedic Disorders & Management –I	MPT-203O	80	20	100	50	-	-	-	-	100
4	Orthopaedic Disorders & Management –II	MPT-204O	80	20	100	50	-	-	-	-	100
5.	Practical	MPT-205	-	-	-	-	160	40	200	100	200
6.	Dissertation	MPT-206	-	-	-	-	-	-	300	150	300
										Grand Total	900

M.P.T. Part-II (Second Year) University Examination
(Neurology)

S. No.	Subjects	Subject code	THEORY MARKS				PRACTICAL MARKS				Total marks
			Theory Paper	Internal Assessment	Total	Minimum marks	Practical	Internal Assessment	Total	Minimum Marks	
1	Pedagogy in Physiotherapy Education	MPT-201	80	20	100	50					100
2	Administration, Management & Ethical Issues	MPT-202	80	20	100	50	-	-	-	-	100
3	Neurological Disorders & Management –I	MPT-203N	80	20	100	50	-	-	-	-	100
4	Neurological Disorders & Management –II	MPT-204N	80	20	100	50	-	-	-	-	100
5.	Practical	MPT-205	-	-	-	-	160	40	200	100	200
6.	Dissertation	MPT-206	-	-	-	-	-	-	300	150	300
										Grand Total	900

M.P.T. Part-II (Second Year) University Examination
(Cardiopulmonary)

S. No.	Subjects	Subject code	THEORY MARKS				PRACTICAL MARKS				Total marks
			Theory Paper	Internal Assessment	Total	Minimum marks	Practical	Internal Assessment	Total	Minimum Marks	
1	Pedagogy in Physiotherapy Education	MPT-201	80	20	100	50					100
2	Administration, Management & Ethical Issues	MPT-202	80	20	100	50	-	-	-	-	100
3	Cardiology Disorders & Management –I	MPT-203C	80	20	100	50	-	-	-	-	100
4	Cardiology Disorders & Management –II	MPT-204C	80	20	100	50	-	-	-	-	100
5.	Practical	MPT-205	-	-	-	-	160	40	200	100	200
6.	Dissertation	MPT-206	-	-	-	-	-	-	300	150	300
										Grand Total	900

M.P.T. Part-II (Second Year) University Examination
(Sports)

S. No.	Subjects	Subject code	THEORY MARKS				PRACTICAL MARKS				Total marks
			Theory Paper	Internal Assessment	Total	Minimum marks	Practical	Internal Assessment	Total	Minimum Marks	
1	Pedagogy in Physiotherapy Education	MPT-201	80	20	100	50					100
2	Administration, Management & Ethical Issues	MPT-202	80	20	100	50	-	-	-	-	100
3	Traumatology & Medical Conditions	MPT-203S	80	20	100	50	-	-	-	-	100
4	Fundamental in sports & Rehabilitation	MPT-204S	80	20	100	50	-	-	-	-	100
5.	Practical	MPT-205	-	-	-	-	160	40	200	100	200
6.	Dissertation	MPT-206	-	-	-	-	-	-	300	150	300
										Grand Total	900

Internal Assessment

- It will be for theory and practical both.
- It will be done through the whole year.
- Candidate must obtain at least 35% marks in theory and practicals separately in internal assessment to be eligible for the annual university examination.

- **Internal assessment (Theory)** will be done as follows :

a)	Seminars/Symposia/Journal club/Assignment/ Clinical presentation	= 10 marks
b)	Mid-term examination	= 05 marks
c)	Attendance/ Teaching Skills	= 05 marks
	Total	**= 20 marks**

- **Internal assessment (Practical)** will be done as follows :

a)	Case Presentation etc.	= 15 marks
b)	Practical Training Skills	= 10 marks
c)	Laboratory Manual	= 10 marks
d)	Attendance	= 05 marks
	Total	**= 40 marks**

Criteria for Passing

- A candidate is declared to have passed University examination in a subject, if he/she secures 50% of the marks in theory and 50% in practicals separately. For computation of 50% marks in theory, the marks scored in the internal assessment (theory) shall be added to the University conducted written examination and for passing in practical the marks scored in University conducted practical examination and internal assessment (practical) shall be added together.

Grace Marks:

- If a candidate fails in one subject (theory only) in the annual University examination, five grace marks will be given to the candidate by the University before the declaration of result.
- Candidate failing in practical examination will be considered as failed.

Supplementary Examination:

- A candidate failing in a subject but securing at least 30% aggregate marks will be required to appear in the university examination after 3 months in that subject/ subjects while attending classes of next year. Those who secure less than 30% aggregate marks will be required to appear in all the subjects.
- If the candidate fails in supplementary examination his/her session will be shifted by one year. The candidate will have to take admission in the previous year and pay the tuition, examination and other fee for the academic year. He/she will have to appear in all the subjects in the examination.
- Supplementary examination will be held not earlier than 3 months and later than 6 months from the date of annual University examination.

Maximum duration for completion for course

- A candidate shall complete the course within four years from date of admission failing which the candidate will be discharged.

Division:

- Candidate will be awarded division at the end of 2nd academic year as follows:
  - Distinction - 75% and above marks in any subject.
  - First division - 60% and above in the aggregate of marks of all subjects
  - Second division- 50% or more but less than 60% in the aggregate of marks of all subjects.

Degree:

- The degree of MPT course of the University shall be conferred according to specialization/discipline on the candidates who have pursued the prescribed course of study for not less than two academic years and have passed examinations as prescribed under the relevant scheme.

"C"

Fee Structure

Tuition Fee, Examination fee and other fees - As decided by the University from time to time.

Security Deposit/ Caution Money (Refundable after completion of the course): As decided by the University from time to time.

"D"
Syllabus

Master in Physiotherapy (MPT) First Year
Review of Basic Physiotherapeutics
Subject Code : MPT-101
Min. Hrs -: 180 Hrs.

EXERCISE THERAPY

- General Exercise therapy and principles
- Assessment Methods & Techniques (like STTT, MMT, Body angles measurement techniques & Goniometry etc.).
- Functional diagnosis measures: Functional activity specific assessment-FIM, ADL Scales, Assessment of health wellness : SF-36.
- Reponses and adaptations of various systems to exercise and training.
- Physiology of movements
- Strengthening exercise
- Mobilization various methods.
- Stretching and soft tissue mobilization and manipulation
- Relaxation, traction, posture, GAIT
- Hydro therapy, Balance and co-ordination.

ELECTROTHERAPY

- General electrotherapy and principles.
- Low medium and high frequency current and modalities
- Di-dynamic, Russian and High volt currents
- UVR, IRR, Laser radiations
- Cryotherapy
- Other physiotherapy and thermal modalities
- Characteristics and components of Electro therapeutic stimulation systems and Electro Physiological assessment devices.
- Muscle plasticity in response to electrical stimulation
- Electrical stimulation and its effect on various systems.

BIOMECHANICS, KINESIOLOGY AND PATHO-MECHANICS

- General Biomechanics, Kinesiology and principles.
- Bone, Joint, articular cartilage, various soft tissue and nerve.
- Biomechanics and pathomechanics
- Biomechanics, kinesiology and pathomechanics and all joints and muscles.
- Evaluation and assessment of postures, abnormal postures, gait and abnormal gaits.
- Evaluation and assessment of joint motions and muscle function.

BIO-ENGINEERING

- General Principles of Bio-Engineering
- Types and uses (orthotics and prosthetics)
- Preparation and application related to various disorders.

Master in Physiotherapy (MPT) First Year

Advanced Physiotherapeutics

Subject Code : MPT-102

Min. Hrs -: 180 Hrs.

MANUAL THERAPY

Part-I: Foundational concepts in Manual therapy Unit

1. History of manual therapy
2. Biomechanical principles in manual therapy
   - Concave-Convex rule
   - Close pack and Loose pack Positions
   - Resting positions
   - Joint status
   - Barrier concepts
   - Fryette's Laws
   - Articular neurology
4. Pain

Part-II: Joints Mobilization Techniques

(Terminology, Principles, Indications, Contra-indications, Assessment and method of application of the following techniques)

1. Kalten born
2. Maitland
3. Mulligan
4. McKenzie
5. Cyriax
6. Butler neural mobilization

Part-III: Soft Tissue Techniques and Recent Advances in Manual therapy

(Terminology, Principles, Indications, Contra indications, Assessment and method of Application of the following techniques) **Unit**

1. Myofascial release techniques
2. Muscle energy techniques
3. Trigger point release
4. High velocity thrust techniques
5. Positional release techniques
6. Lymphatic manipulations

Nerve Conduction studies, EMG and Biofeed Back

Theory

- Physiology and nerve conduction
- Electrical activities of muscles
- Different type of EMG recording in normal and abnormal muscles.
- MNCV, SNCV, 'H' reflex, F, wave & blink reflex.
- Procedure and recording methods mechanisms
- Physiology and mechanisms bio feed, procedure and application of various disorders.

Ergonomics

1. History of ergonomics
2. Worker care spectrum
3. Postural examination
4. Job analysis
5. Work hardening programme
6. Exit assessment
7. Pre-employment screening
   - Job analysis
   - Job task analysis
   - Job site analysis
8. Work capacity analysis
9. Role of Physiotherapy in industrial set up
10. Workers functional capacity assessment
11. Industrial therapy
12. Adult education
13. Injury prevention and ergonomics

Radiology, Pathology and Diagnostic Studies

Theory

- General studies
- Principle of reading radiological reports
- X-Ray, CT Scan and MRI scan in relation with various disorders/diseases
- Routine examination of blood urine, and sputum, procedures and analysis of the report.
- Clinical co-relation with various disorders.
- EEG, evoke potential etc.

Master in Physiotherapy (MPT) First Year

Research Methodology and Biostatistics

Subject Code : MPT-103

Min. Hrs -: 100 Hrs.

RESEARCH METHODOLOGY

1. Research in physiotherapy

- Introduction
- Research for Physiotherapist: Why? How? And When?
- Research – Definition, concept, purpose, approaches
- Internet sites for Physiotherapist

2. Research Fundamentals

- Define measurement
- Measurement framework
- Scales of measurement
- Pilot Study
- Types of variables
- Reliability & Validity
- Drawing Tables, graphs, master chart etc

3. Writing a Research Proposal, Critiquing a research article

- Defining a problem
- Review of Literature
- Formulating a question, Operational Definition
- Inclusion & Exclusion criteria
- Forming groups
- Data collection & analysis
- Results, Interpretation, conclusion, discussion
- Informed Consent
- Limitations

4. Research Design

- Principle of Designing
- Design, instrumentation & analysis for qualitative research
- Design, instrumentation & analysis for quantitative research
- Design, instrumentation & analysis for quasi-experimental research
- Design models utilized in Physiotherapy

5. Research Ethics

- Importance of Ethics in Research
- Main ethical issues in human subjects' research
- Main ethical principles that govern research with human subjects
- Components of an ethically valid informed consent for research

BIOSTATISTICS

1. Biostatistics

- Introduction
- Definition
- Types
- Application in Physiotherapy

2. Data

- Definition
- Types
- Presentation
- Collection methods

3. Measures of central value

- Arithmetic mean, median, mode. Relationship between them
- Partitioned values- Quatertiles, Deciles, Percentiles
- Graphical determination

4. Measures of Dispersion

- Range
- Mean Deviation
- Standard Deviation

5. Normal Distribution Curve

- Properties of normal distribution
- Standard normal distribution
- Transformation of normal random variables.
- Inverse transformation
- Normal approximation of Bioaxial distribution.

6. Correlation analysis

- Bivariate distribution:
- Scatter Diagram
- Coefficient of correlation
- Calculation & interpretation of correlational coefficient
- T-test, Z-test, P-value

7. Regression analysis

- Lines of regression
- Calculation of Regression coefficient
- Sampling distribution
- Standard error
- Types I & II error

9. Probability (in Brief)

10. Hypothesis Testing

- Null Hypothesis
- Alternative hypothesis
- Acceptance & rejection of null Hypothesis
- Level of significance

11. Parametric & non parametric tests

- Chi square test
- Mann-Whitney U test
- Wilcoxon Signed test
- Kruskal-Wallis test
- Friednam test
- T-test/student T test
- Analysis of variance

Master in Physiotherapy (MPT) First Year

Practical

Subject Code : MPT-104

Min. Hrs -: 200 Hrs.

1. Assessment, evaluation and diagnosis
2. Practice and application of physiotherapeutic system in hospital/centre/ institution.
3. Application of advance physiotherapeutic maneuvers like manipulation (maitland, cyriax, mulligan etc.) and various neurological interventional concepts (bobath, NDT etc.).
4. Clinical reasoning, decision making, evidence based practice and recording system.
5. Short case from area of elective to assess investigative and diagnostic skills
6. Short case from area of elective to assess patient management skills

Master in Physiotherapy (MPT) First Year

Clinical Lab Practices

(Common to all specialization/discipline)

Min. Hrs -: 440 Hrs.

Post graduate students must know :

- Assessment, evaluation and diagnosis.
- Practice and application of physiotherapeutic system in hospital/ institution.
- Application of advance physiotherapeutic maneuvers like manipulation and various neurological interventional concepts.
- Clinical reasoning, decision making, evidence based practice and recording system.

Master in Physiotherapy (MPT) First Year

Teaching Skills/ Seminars/Symposia/Journal Club etc.*
(Common to all specialization/discipline)
Min. Hrs -: 260 Hrs.

(a) Teaching Skills

Candidates should be encouraged to teach undergraduate students if any. This performance will be based on assessment by the faculty members of the department and from feedback from the undergraduate students.

(b) Seminar/Symposia

- Seminars /recent advance presentation will be held every week, however, its timings are subject to clinical schedule. Topics must be well researched and must include common knowledge, recent advances, analysis and references.
- PG students should present minimum of two seminars (One in general and one in elective area) and Internal Assessment marks with depend on better topic selection and presentation.

(c) Journal Review Meeting (Journal Club):

The ability to do literature search, in depth study, presentation skills, and use of audio-visual aids are to be assessed. The assessment is made by faculty members and peers attending the meeting.

(d) Work diary / Log Book

Every student shall maintain a work diary and record his/her participation in the training programmes conducted by the department such as journal reviews, seminars, etc. Special mention may be made of the presentations by the candidate as well as details of clinical practice, if any conducted by the candidate by the student.

Master in Physiotherapy (MPT) Second Year

Pedagogy in Physiotherapy Education

(Common to all specialization/discipline)

Subject Code : MPT-201

Min. Hrs -: 100 Hrs.

Objective:

On completion of the study of this subject the student should be able to

- Understand the Dynamics of teaching & learning
- Plan effective teaching sessions in Physiotherapy

Following are the topics to be included but not limited to:

1. **Education**
   - Introduction
   - Educational Philosophy- Idealism Naturalism, Pragmatism
   - Aims of Education
   - Functions of Education
   - Formal, informal and non-formal Education
   - Agencies of Education
   - Current issues and Trends in Higher Education
   - Issue of quality in Higher Education
   - Autonomy and Accountability
   - Privatization of Education
2. **Concept of Teaching and Learning**
   - Meaning and scope of Educational Psychology
   - Meaning and Relationship between teaching and learning
   - Learning Theories
   - Dynamics of behavior
   - Individual differences
3. **Curriculum**
   - Meaning and concept
   - Basis of curriculum formulation
   - Framing objectives for curriculum
   - Process of curriculum development and factors involved.
   - Evaluation of curriculum
4. **Method and techniques of teaching**
   - Lecture
   - Demonstration
   - Discussion
   - Seminar
   - Assignment
   - Project
   - Case Study
5. **Planning for teaching**
   - Bloom's taxonomy of instructional objectives
   - Writing instructional objectives in behavioural terms
   - Unit planning
   - Lesson planning

6. Teaching aids

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

7. Measurement and Evaluation

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

8. Guidance and counseling

- Meaning & concepts of guidance and counseling
- Principles of guidance and counseling

9. Awareness PROGRAMME

- Awareness and guidance to the common people about health and disease

Master in Physiotherapy (MPT) Second Year

Administration Management & Ethical Issues

(Common to all specialization/discipline)

Subject Code : MPT-202

Min. Hrs -: 100 Hrs.

Objective:

On completion of the study of this subject the student should be able to

- Understand the basic issues of Management & Administration
- Practice as an informed professional on Legal & ethical issues

SECTION I

Management:

- Introduction
- Evolution of management
- Functions of management
- Management process – planning, organization, direction, controlling
- Decision-making.

Personnel management:

- Staffing
- Recruitment selection
- Performance appraisal
- Collective bargaining
- Job satisfaction

Marketing:

- Market segmentation
- Channels of distribution
- Promotion
- Consumer behavior

Total Quality Management:

- Basics of quality management
- Quality control
- Quality assurance PROGRAMME in hospitals & medical audit
- International quality system.

SECTION II

Administration, Legal Ethical Issues

- Hospital as an organization - Functions and types of hospitals
- Roles of Physical therapist, Physical therapy Director, Physiotherapy supervisor, Physiotherapy
- assistant, Physiotherapy aide, Home health aide, Volunteer.
- Rules of Professional Conduct.
- Legal responsibility
- Code of ethics
- Functions of Physiotherapy associations
- Role of the International Health Agencies
- Standards of practice for physiotherapists
- Liability and obligations in the case of medical legal action
- Law of disability & discrimination
- Confidentially of the Patient's status
- Consumer protection law, health law, MCI, DC

Master in Physiotherapy (MPT) Second Year

Orthopaedic Disorders and Management-I

Subject Code : MPT-203O

Min. Hrs -: 180 Hrs.

Objective:

On completion of the study of this subject the student should be able to

- Correlate the clinical manifestations to the organ of dysfunction of the musculoskeletal system
- To understand the Conservative & Surgical management of the musculoskeletal conditions as relevant to physiotherapy.

Musculoskeletal disorders

- Introduction, epidemiology of disease pattern, Path physiology, Clinical
- presentation, conservative management & complications of the following clinical conditions:

General Musculoskeletal Disorders

1. Congenital Malformation

- Upper Limb
- Lower Limb
- Spine

2. Rheumatic disorders

- Rheumatoid arthritis
- Ankylosis Spondylosis
- Reiter's disease
- Polymyalgia rheumatica
- Psoriasis

3. Infections of musculoskeletal system

- Acute
- Chronic

4. Metabolic and endocrine disorders

- Calcium metabolism
- Osteoporosis
- Osteomalacia and ricket
- Hyper parathyrodism

5. Tumors of the musculoskeletal system

- Classification
- Benign
- Malignant

6. Neuromuscular disorders

- Poliomyelitis.
- Cerebral palsy
- Arthrogryposis multiplex Congenita
- Muscular dystrophy

7. Osteoarthritis and crystal deposition diseases

Musculoskeletal Disorders

Orientation and General principles of Orthopaedic surgery-

1. Arthrodesis
2. Osteotomy
3. Arthroplasty
4. Bone grafting
5. Internal and external fixations
6. Distraction and limb reconstruction
7. Correction of bone deformities and joint contractures.
8. Tendon transfers
9. Nerve suturing and grafting.

PHYSIOTHERAPY ASSESSMENT

1. Review of General assessment – patients history, observation, palpation, examination
2. Pain assessment and scales for evaluation in acute and chronic pain
3. Sensory assessment
4. Motor assessment
5. Balance assessment and scales for assessment. Balance Outcome measures and there administration.
6. Assessment of Tone, flexibility, tightness of musculoskeletal tissues
7. Muscle Length Testing and special tests for the same
8. Reflex testing
9. Limb length measurement recent methods for assessment and its clinical applications
10. Postural assessment methods and common deviations from the normal
11. Examination of movements, Range of Motion
12. Clinical Gait assessment (observational methods and EMG gait analysis)
13. Functional assessment
14. X-Ray, MRI, CT report reading and analysis
15. Physical Disability evaluation in detail .ICF classification

PHYSIOTHERAPY MANAGEMENT

Review of Basic Techniques:

1. Stretching (principals and methods)
2. Strengthening (principals and methods)
3. Passive movements testing and end feel assessment
4. Active exercise training , its benefits and various methods
5. Assisted resisted exercise training
6. Resisted exercise training. Its uses and disadvantages in comparison with other forms of exercise training
7. Postural Re-education (methods and techniques)
8. Electrotherapy Modalities(principal off application and properties along with various indications and contraindications)

Advanced Physiotherapy Treatment approaches:

1. Mobilization techniques like Mc Kenzie.
2. Pain management with emphasis on pain of peripheral origin and central origin
3. Gait Training
4. Biofeedback
5. Hydrotherapy
6. Patient & family education
7. Role of splints in Physiotherapy
8. Relaxation Techniques
9. Massage therapy
10. Wheel chair skills-basic

Master in Physiotherapy (MPT) Second Year

Orthopaedic Disorder & Management-II

Subject Code : MPT-204O

Min. Hrs -: 180Hrs.

OBJECTIVE:

On completion of the study of this subject the student should be able to

- Correlate the clinical manifestations to the organ of dysfunction of the Musculoskeletal system
- To understand the conservative & surgical management of the Musculoskeletal conditions as relevant to physiotherapy.

Following are the topics to be included but not limited to:

MUSCULOSKELETAL DISORDERS

Introduction, epidemiology of disease pattern, Path physiology, Clinical presentation, complication and physiotherapy management of the following clinical conditions:

Regional Orthopeadics

1. The shoulder

- Rotator cuff lesions
- Instability
- Rheumatoid disease of shoulder.
- Tuberculosis

2. The Elbow

- Tennis elbow
- Golfer's elbow
- Myositis ossificans

3. The Wrist

- Carpal tunnel syndrome
- Ganglion
- Wrist instabilities and special tests

4. The Hand

- Peripheral nerve injuries
- Tendon lesions and transfer surgeries
- Deformity in rheumatoid arthritis, peripheral nerve injuries, Hemiplegia
- SCI and leprosy

5. Cervical Spine

- Discogenic pain
- Whiplash injuries
- Thoracic outlet syndrome
- Brachial plexus injury and plexopathies
- Torticollis and wry neck in pathologies of cervical spine

6. Back

- Inervertebral disc.
- Discogenic pain
- Spondylolysis & listhesis
- Scoliosis & kyphosis
- Tuberculosis

- Musculoskeletal causes of low back pain

7. The Hip

- A vascular necrosis of femoral head.
- Osteoarthritis
- Principles of Total Hip Replacement (THR)

8. Knee

- Osteoarthritis
- Meniscal / ligament injuries
- Genu valgum / varum
- Principles of Total Knee Replacement (TKR)

9. Ankle and foot

- Metatarsalgia
- Flat foot
- Carsus foot
- Hallax valgus
- CTEV
- Ankle sprains

10. Fractures and joint injuries

- Principles of acute fracture care
- Conservative management of the following:
- Pediatric fractures
- Injuries of shoulder, upper arm and elbow
- Injuries of forearm and wrist
- Neurosurgery
- Injuries of Spine
- Injuries of Pelvis
- Injuries of Hip and Femur
- Injuries of Knee.
- Leg Injuries
- Injuries of ankle and foot

MUSCULOSKELETAL SURGERIES

General Principal and Orientation –

1. Operations on joints
2. Menisectomy, laminectomy, patellectomy, total knee and hip replacement
3. Malformations of spine & spinal cord
4. Surgeries for disc disorders
5. Amputations for upper and lower extremities.
6. Surgical management of fractures & other injuries
7. Orthopaedic implants- designs, materials, indications, post operative assessment

PHYSIOTHERAPY ASSESSMENT

Review of General assessment – patients history, observation, palpation, examination

- Pain assessment
- Sensory and motor assessment
- Balance assessment
- Assessment of tone, flexibility and tightness
- Muscle Length Testing
- Reflex testing
- Limb length measurement
- Postural assessment
- Examination of movements, Range of Motion
- Clinical Gait assessment
- Functional assessment and outcome scales and questionnaires
- X-Ray, MRI, CT report reading & analysis
- Physical Disability evaluation and ICF classification. (in brief)
- Clinical Orthopaedic testing

Advanced physiotherapy Treatment approaches

- Mobilization techniques: Mulligan Cyriax, Maitland
- Combined movement therapy
- Muscle energy techniques and its applications
- Positional release techniques
- Myofasical release
- Trigger point therapy
- Group exercises
- Physiotherapy in home setting and use of assistive aids
- External aids, appliances, and adaptive self-help devices:
- Prescription, biomechanics, checkout and training.
- Community based rehabilitation in musculoskeletal disorders.
- Wheelchair prescription and advanced skills
- Transfer techniques.

Master in Physiotherapy (MPT) Second Year

Practical (Common to all specialization/discipline)

Subject Code : MPT-205

Min. Hrs -: 200 Hrs.

Practical - Clinical Examination

It should be aimed for assessing competence and skills of physiotherapeutic intervention and procedures as well as testing students ability to make relevant and valid observations, diagnostic & prognostic interpretations and inference, clinical, laboratory or experimental work relating to this her subject.

1. Assessment, evaluation and diagnosis
2. Practice and application of physiotherapeutic system in hospital/centre/ institution.
3. Application of advance physiotherapeutic maneuvers like manipulation (maitland, cyriax, mulligan etc.) and various neurological interventional concepts (bobath, NDT etc.).
4. Clinical reasoning, decision making, evidence based practice and recording system.
5. Major Elective long case aimed at examining clinical skills and competency of the candidate for undertaking independent work as specialist
6. Short case from area of Elective to assess patient management skills.

Master in Physiotherapy (MPT) Second Year
Dissertation (Common to all specialization/discipline)
Subject Code : MPT-206

Every candidate pursing MPT degree course is required to carry out research work on a selected research project under the guidance of a recognized postgraduate teacher. The results of such a work shall be submitted in the form of dissertation. Topic for dissertation shall be assigned by the guide.

Fulltime recognized PG Teacher/Guide from other institute can act only as a co-guide, If the subject of Thesis entails collaboration with other departments or specialties, the collaborative portion of the work will be supervised by Co-Guide, designated by the University Institute of Health Sciences in consultation with the Guide. Where a Co-Guide is involved, the Thesis will be certified jointly by the Guide & Co-guide.

Every candidate shall submit synopsis to the University in the prescribed Performa containing particulars of proposed dissertation work, within 6 months from the date of commencement of the course on or before the dates notified by the university. The synopsis shall be sent through the proper channel. Such synopsis will be reviewed and the university will register the dissertation topic.

No change in the dissertation topic or guide shall be made without prior approval of the university. Guide will be only a facilitator, advisor of the concept and hold responsible in correctly directing the candidate in the methodology and not responsible for the outcome and results.

The dissertation should be written under the following headings.

1. Introduction
2. Aims or objectives of study
3. Review of literature
4. Material and methods
5. Results
6. Discussion
7. Conclusion
8. References
9. Master and Chart & Table (If Applicable)
10. Annexure (If Applicable)

The written text of dissertation/ research project shall not be less than 50 pages and shall not exceed 120 pages excluding references, tables, questionnaires and other annexure. It should be neatly typed in double line spacing on one side of bond paper (A4 size, 8.27" x 11.69") and bound properly. Spiral binding should be avoided. A declaration by the candidate for having done the work himself should also be included, and the guide, head of the department and Director/Coordinator of the institute shall certify the dissertation/ research project.

Every candidate is required to give power point presentation before final submission of dissertation. Four copies of Dissertation/research project shall be submitted to the university, through proper channel, along with a soft copy (CD), 6 months before the final examination. It shall be assessed by two examiners appointed by the university, one internal and one external. There will be a power point open presentation of the submitted dissertation as per the schedule given by the university. This presentation shall be jointly evaluated by external and internal examiner as per the criteria given below:

Objective(s) of the work done	50 Marks
Methodology adopted	100 Marks
Result and Discussion	100 Marks
Conclusion & outcome	50 Marks
Total	**300 Marks**

To pass in the dissertation a student must secure 150 marks.

If the student failed to secure the minimum passing marks he will resubmit the dissertation 1½ month before the supplementary exam.

Master in Physiotherapy (MPT) Second Year

Clinical Lab Practices

(Common to all specialization/discipline)

Min. Hrs -: 440 Hrs.

Post graduate students must know :

- Assessment, evaluation and diagnosis.
- Practice and application of physiotherapeutic system in hospital/ institution.
- Application of advance physiotherapeutic maneuvers like manipulation and various neurological interventional concepts.
- Clinical reasoning, decision making, evidence based practice and recording system.

Master in Physiotherapy (MPT) Second Year

Teaching Skills/ Seminars/Symposia/Journal Club etc.
(Common to all specialization/discipline)
Min. Hrs -: 260 Hrs.

(a) Teaching Skills

Candidates should be encouraged to teach undergraduate students if any. This performance will be based on assessment by the faculty members of the department and from feedback from the undergraduate students.

(b) Seminar/Symposia

- Seminars /recent advance presentation will be held every week, however, its timings are subject to clinical schedule. Topics must be well researched and must include common knowledge, recent advances, analysis and references.
- PG students should present minimum of two seminars (One in general and one in elective area) and Internal Assessment marks with depend on better topic selection and presentation.

(c) Journal Review Meeting (Journal Club):

The ability to do literature search, in depth study, presentation skills, and use of audio-visual aids are to be assessed. The assessment is made by faculty members and peers attending the meeting.

(d) Work diary / Log Book

Every student shall maintain a work diary and record his/her participation in the training programmes conducted by the department such as journal reviews, seminars, etc. Special mention may be made of the presentations by the candidate as well as details of clinical practice, if any conducted by the candidate by the student.

Master in Physiotherapy (MPT) Second Year
Neurological Disorders & Management-I
Subject Code : MPT-203N
Min. Hrs -: 180 Hrs.

NEUROLOGICAL DISORDERS

Introduction, etiology, Path physiology,
Clinical presentation, conservative management & complications of the following clinical conditions:

- Congenital & hereditary Disorders
- Disorders of cerebral circulation
- Head Injury
- Spinal Cord Injury
- Disorders of Peripheral nerves
- Disorders of cranial nerves
- Disorders of muscles

Investigations
Orientation and Introduction, Physical basis, normal result & common abnormal responses, (in brief)

- Skull X ray
- Computerized Tomography
- Magnetic Resonance Imaging
- Intracranial Pressure monitoring
- Evoked Potentials
- EMG/ NCV
- Lumbar puncture
- Common Laboratory tests in Neurological disorders

NEUROSURGICAL DISORDERS

1. General Principles of neurosurgery
2. Disorders of CSF Fluid & circulation
3. Cerebral malformations
4. Spasticity management
5. Surgical repair of peripheral Nerves
6. Muscle lengthening/ Release
7. Management of an unconscious Patient
8. ICU management of a neurologically ill patient

PHYSIOTHERAPY ASSESSMENT

Perform thorough Physiotherapy assessment & list deficiencies

- Design individualized goals for the patient
- Rationalize the outcome of the assessment
- Document systematic, meaningful, accurate written records of the patient

1. Review of General assessment

2. Assessment of Higher mental functions
3. Neurodevelopment assessment
4. Pain assessment
5. Sensory assessment
6. Assessment of Tone, flexibility, tightness
7. Motor Control assessment
8. Muscle Length Testing
9. Postural assessment
10. Limb length measurement
11. Range of Motion
12. Balance assessment
13. Coordination assessment
14. Reflex Testing
15. Cranial nerve testing
16. Nerve Tension testing
17. EMG/ NCV report reading & analysis
18. Clinical Gait assessment
19. Functional assessment
20. Physical disability evaluation (in brief)

PHYSIOTHERAPY MANAGEMENT

Review of Basic Techniques:

1. Stretching
2. Strengthening
3. Passive movements
4. Active exercise training
5. Assisted Resisted Exercise training
6. Resisted exercise training
7. Postural Re-education
8. Electrotherapy Modalities

Advanced Physiotherapy Treatment approaches:

1. Neurodevelopment technique
2. Bo bath
3. Vojta
4. Brunnstrom
5. PNF
6. Rood's Approach
7. Pain management
8. Gait Training
9. Wheelchair Prescription
10. Biofeedback
11. Hydrotherapy
12. Relaxation technique
13. Pediatric Neurophysiotherapy
14. Geriatric Neurophysiotherapy
15. Assistive Technologies and its role in Neurorehabilitation
16. Prosthetics and Orthotics in Neurorehabilitation
17. Wheelchair skills- Basic

Master in Physiotherapy (MPT) Second Year

Neurological Disorders & Management-II

Subject Code : MPT-204N

Min. Hrs -: 180 Hrs.

Objective:

On completion of the study of this subject the student should be able to:

- Correlate the clinical manifestations to the organ of dysfunction of the nervous system
- To understand the conservative & surgical management of the Neurological conditions as relevant to physiotherapy.

Following are the topics to be included but not limited to:

NEUROLOGICAL DISORDERS

Introduction, epidemiology of disease pattern, Path physiology, Clinical presentation, conservative management & complications of the following clinical conditions:

1. Degenerative disorders
2. Movement disorders
3. Autoimmune disorders
4. Infectious disorders of nervous system
5. Balance disorders
6. Disorders of spine & spinal cord
7. Metabolic & Nutritional disorders
8. Disorders of nervous system due to drugs & chemical agents
9. Tumors
10. Epilepsy
11. RSD
12. Brief outline on Psychiatric disorders

NEUROSURGICAL DISORDERS

Orientation and General principles of Neuro surgery

1. Intracranial abscess
2. Malformations of spine & spinal cord
3. Surgeries for disc disorders
4. Decompression surgeries for tumors
5. Stereotactic surgery
6. Image guided frameless stereotaxy
7. Psychosurgery

PHYSIOTHERAPY ASSESSMENT

1. Review of General assessment
2. Pain assessment
3. Sensory and motor assessment
4. Assessment of Tone, flexibility, tightness
5. Muscle Length Testing
6. Postural assessment
7. Limb length measurement
8. Range of Motion

9. Balance assessment
10. Coordination assessment
11. Reflex Testing
12. Cranial nerve testing
13. Nerve Tension testing
14. EMG/ NCV report reading & analysis
15. Clinical Gait assessment
16. Functional assessment
17. Environmental assessment

PHYSIOTHERAPY MANAGEMENT

Advanced Treatment approaches

- Neural mobilization technique
- Balance & Coordination training
- Vestibular training
- Cognitive and Perceptual disorders
- Environmental modifications
- Muscle energy techniques
- Group exercises
- Wheelchair skills- Advanced

Master in Physiotherapy (MPT) Second Year

Cardiopulmonary Disorders & Management-1

Subject Code : MPT-203C

Min. Hrs -: 180 Hrs.

CARDIOLOGY

Epidemiology, Pathomechanics, clinical presentation, relevant diagnostic test (ECG, Echo cardiography, cardiac catheterization, Radionuclide scanning, stress testing, ABG, Labs etc.) and medical management of disorders of the cardiac system.

1. Assessment of symptoms of heart disease
2. Disorder of cardiac rate, Rhythm and condition
3. Cardiac Arrest
4. Cardiac failure
5. Shock
6. Rheumatic fever
7. Congenital heart disease
8. Disease of the heart valve
9. Infective Endocarditis
10. Ischemic heart disease
11. Hypertension
12. Orthostatic hypotension
13. CPR
14. Pericarditis
15. Heart disease in pregnancy
16. Degenerative arterial disease
17. Inflammatory arterial disease
18. Raynaud's disease
19. Venous thrombosis
20. Peripheral Vascular disease
21. Cardio myopathy
22. Disease of the pericardium

PHYSIOTHERAPY ASSESSMENT & MANAGEMENT

This course provide student with the principal of physiotherapy management in disorder of the cardiopulmonary system and the application of these principal in specific disorders. Through lecture, case conferences, journal discussion and class discussions students will be able to set up a treatment programme tailored to the patient's needs.

GENERAL PRINCIPAL

1. P.T. Assessment
2. Mobilization and Exercises (Strengthening conditioning and endurance)
3. Body positioning
4. Airway Clearance Techniques
5. Postural Drainage
6. Forced Expiratory technique
7. Breathing Exercise
8. Percussion and vibration
9. Exercise training and Exercise testing
10. Bio feed back
11. Respiratory Muscle training
12. Ventilator

13. Humidification and Aerosol therapy
14. Applying and Evaluating Bronchial Hygiene therapy
15. outcomes of pulmonary Rehabilitation
16. Functional Adaptations
17. Prevention of Morbidity and Mortality with the use of physical aids
18. PT in ICU
19. Techniques for facilitating ventilatory pattern
20. Respiratory therapy equipment and adjuncts to Cardiopulmonary therapy
21. Principal and prescription of cardiac Rehabilitation
22. Principal and prescription of pulmonary Rehabilitation
23. PT in neonatal ICU
24. Diabetes and Exercise

Master in Physiotherapy (MPT) Second Year

Cardiopulmonary Disorders & Management-II

Subject Code : MPT-204C

Min. Hrs -: 180 Hrs.

PULMONOLOGY

Epidemiology, pathomechanics, clinical presentation, relevant diagnostic tests (PFT, Labs etc.) and medical management of disorders of the pulmonary system.

1. Obstructive pulmonary disease
2. Infection of the Respiratory system
3. Interstitial and infiltrative pulmonary disorders
4. Pulmonary disorders due to exposure to Organic and inorganic pollutants.
5. Pulmonary disorders due to systemic inflammatory disease
6. Pulmonary vascular disease
7. Disease of pleura
8. Respiratory failure
9. Supplemental Oxygen and Oxygen delivery devices in Chronic Respiratory Disease.
10. Neuromuscular and Skeletal disorders leading to Global Alveolar Hypoventilation
    - Myopathies
    - Spinal muscular Artophies
    - Poliomyelitis
    - Motor Neuron Disease
    - HSMN
    - Kyphoscoliosis
    - Pectus Carinatum
    - Pectus Excavatum
11. Pathophysiology of paralytic – Restrictive pulmonary syndromes
12. Conventional Approaches to managing n-M-Ventilatory failure
13. Mechanical ventilation: Concept, Physiological effect and complications

CARDIOTHORACIC SURGERY

Surgical management of the above conditions, indication, contraindications for surgery, precautions after surgery. Also included:

1. Close v/s open heart surgery
2. Incisions
3. Preoperative Assessment of Patient
4. Pre and post op blood gas exchange
5. Haemodynamic performance of CTVS Patients
6. Emergencies in CTVS
7. A-V Shunt
8. Heart Transplant
9. Left Ventricular Assistive devices
10. Procedure on Sternum, Chest wall, diaphragm, mediastinum, oesophagus
11. Cardiopulmonary Bypass
12. Maintaining and Removing Artificial Airways

PHYSIOTHERAPY ASSESSMENT & MANAGEMENT

This course provide student with the principal of physiotherapy management in disorder of the cardiopulmonary system and the application of these principal in specific disorders. Through lecture, case conferences, journal discussion and class discussions students will be able to set up a treatment programme tailored to the patient's needs.

GENERAL PRINCIPAL

1. P.T. Assessment
2. Mobilization and Exercises (Strengthening conditioning and endurance)
3. Body positioning
4. Airway Clearance Techniques
5. Postural Drainage
6. Forced Expiratory technique
7. Breathing Exercise
8. Percussion and vibration
9. Exercise training and Exercise testing
10. Bio feed back
11. Respiratory Muscle training
12. Ventilator
13. Humidification and Aerosol therapy
14. Applying and Evaluating Bronchial Hygiene therapy
15. outcomes of pulmonary Rehabilitation
16. Functional Adaptations
17. Prevention of Morbidity and Mortality with the use of physical aids
18. PT in ICU
19. Techniques for facilitating ventilatory pattern
20. Respiratory therapy equipment and adjuncts to Cardiopulmonary therapy
21. Principal and prescription of cardiac Rehabilitation
22. Principal and prescription of pulmonary Rehabilitation
23. PT in neonatal ICU
24. Diabetes and Exercise

Master in Physiotherapy (MPT) Second Year

Traumatology & Medical Conditions

Subject Code : MPT-203S

Min. Hrs -: 180 Hrs.

Course Objective

- Analyze and interpret various sports injuries/pathomechanics and apply appropriate therapeutic techniques on and off the field.
- Devise/modify various exercises for sports personnel and prevent injuries by applying proper dynamic during play.
- Analyse the effect of therapeutic modalities, indicators and contraindications and precaution to ensure safety.
- Demonstrate skills of assessment and management in both acute and long standing injury conditions.
- Carry out research in a particular aspect /specific event based on biomechanical/ physiological and other variables.

Units-I : Assessment Principles : detailed physical assessment of spine, hip and thigh, knee and leg, foot and ankle, shoulder and arm, elbow and forearm, wrist and hand.

Units-II : Common Back Problems in injuries: PIVD, Spondylosis, spondyloslisthesis, spinal canal, stenosis, postural strain, back injuries in sports, ankylosing spondylitis, scoliosis, wishplash injuries, cervical spin etc.

Units-III : Hip and Thigh Problems and Injuries: Perthes disease, coax vara, ligament and muscle injuries in sports, irritable hip, arthritis, congenital dislocation of the hip etc.

Units-IV : Knee and leg Problems and Injuries: Arthritis, genu valgum and varum, meniscal injuries ligament and muscle injuries, loose bodies, bursitis etc.

Units-V : Ankle and foot problems and injuries: Pain in heel, pain behind heel, plantar fasciitis, motion's neuralgia, pes planus and pes cavus, CTEV, muscle and ligament injuries.

Units-VI : Shoulder and arm Problems and Injuries : Rotator cuff injuries, periarthritis, bursitis, painful arc syndrome.

Units-VII : Elbow and forearm injuries and problems: Cubitus valgus and varus, arthritis, tennis and golfer elbow and other injuries.

Units-VIII : Wrist and Hand : Claw hand, duptyrens contracture, trigger, finger, arthritis, dequevrains disease, base ball finger, mallet finger, cricket finger, drop finger.

Units-IX : Common fractures and dislocations: Fractures and dislocations of Upper limb, Lower limb, spine and stress fractures.

Units-X : Diagnosis and Management of Skin conditions of athletes: Fungal infections, boils, cellulites, sunburn etc.

Units-XI : Female specific Problems: Sports amenorrhoea, injury to female reproductive tract, menstrual problems, eating disorders, osteoporosis etc.

Units-XII : Common Diseases: Common cold, fever, diarrhea, dysentery amoebiasis sore throat, stress ulcers, skin infection etc.

Master in Physiotherapy (MPT) Second Year
Fundamental in sports & Rehabilitation
Subject Code : MPT-204S
Min. Hrs -: 180 Hrs.

Unit-I : Brief idea about some common sports: Terminology, methodology, rules, equipments and infrastructure.

Cricket, football, hockey, tennis, badminton, table tennis, wrestling, boxing, track and field, gymnastic volleyball, basketball and aquatic sports.

Unit-II : Physics in sports : Type of motion, distance, speed, velocity, angular motion, acceleration, inertia, mass, newtons law of motion, force and its characteristics, classification, of force system couple composition and resolution of force system, function, projectile motion, levers and fluid mechanics.

Unit-III : Physiological response to exercise, Nutrition in sports.

Unit-IV: Biomechanics :

Biomechanics of running
Biomechanics throwing
Biomechanics jumping
Introduction to analysis equipment

Unit-V: Miscellaneous

Psychological aspect in sports.
Spirit and moral values, dropping in sports and performance enhancing drugs.
Special aids in performance
Body composition, its analysis and effects of sports.
Protective equipment used in sports.

PATTERN OF MODEL QUESTION PAPER FOR MPT

MASTER OF PHYSIOTHERAPY PART-I

Theory

Duration of Questions Paper	= 3 Hrs.	
Maximum Marks	= 80	
Minimum Marks	= 40	
No. of Questions		
No. of Long Questions	= 4 (Attempt any two)	- 2x20 = 40
No. of Short Answer Question	= 3 (Attempt any two)	- 2x 10 = 20
No. of very short answer questions	= 6 (Attempt any four)	- 4 x 5 = 20

Practical

Maximum Marks	=	160
Minimum Marks	=	80

Practical-A
Short case to assess investigative & diagnostic skills = 80 Marks

Practical-B
Short case to assess patient management skills = 80 Marks

Note : All cases for clinical examination should be on patient not on model.

MASTER OF PHYSIOTHERAPY PART-II

Theory

Duration of Questions Paper	= 3 Hrs.	
Maximum Marks	= 80	
Minimum Marks	= 40	
No. of Questions		
No. of Long Questions	= 4 (Attempt any two)	- 2x20 = 40
No. of Short Answer Question	= 3 (Attempt any two)	- 2x 10 = 20
No. of very short answer questions	= 6 (Attempt any four)	- 4 x 5 = 20

Practical

Maximum Marks	=	160
Minimum Marks	=	80

Practical-A
Major elective long case aimed at examining clinical skills and competency of the candidate for undertaking independent work as specialist = 100 Marks

Practical-B
Short case from area of elective to assess patient management skills = 60 Marks

Note : All cases for clinical examination should be on patient not on model.

RECOMMENDED BOOKS

1. Scientific basis of human movement – Gowitzke, Willams and Wilkins, Baltimore, 1988 3rd edition.
2. Clinical biomechanics of spine – White A,A and Panjabi-J.B Lippincot, Philadelphia 1978.
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