



SHRI
DHARMASTHALA
MANJUNATHESHWARA
UNIVERSITY

Ordinance Governing
MPT Degree Course 2 Years
Curriculum 2019-20

SHRI DHARMASTHALA MANJUNATHESHWARA UNIVERSITY

(A State Private University established under the Shri Dharmasthala Manjunatheshwara University
Act No 19 of 2018 of Government of Karnataka and Notification No. ED 261 URC 2018 dated 19th December 2018)

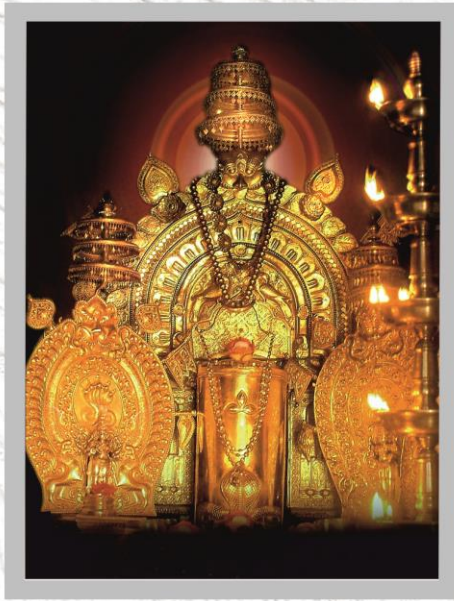
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|| Om Shri Manjunathaya Namaha ||



Shree Kshethra Dharmasthala

Edition Year : 2019-20

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THE LOGO

Poojya Dr D. Veerendra Heggade, Hon'ble Chancellor of the University, while searching for an appropriate Logo for the University, saw a photograph picked from Temple Architecture showing Wings of a Bird, sculpted in Indian style and wanted it to be incorporated in the logo for the University, as the Wings symbolize 'Spreading of Knowledge beyond Boundaries'. Further it was felt that the Central theme of the logo should be 'Rudra' (The Linga) with three wings on each side. In this way, the logo of the University was conceptualized.

Hence:

1. The central part represents **Rudra** who Demolishes Darkness.
2. The Three **horizontal lines on The Linga** stand for Samyak Darshan (Right Belief), Samyak Gyan (Right Knowledge) and Samyak Charitra (Right Conduct).
3. The **Wings** symbolize spreading of Knowledge across the boundaries.
4. Base line **"Truth Liberates"** highlights the Purpose of Education: to liberate oneself unconditionally. It shows that it is not discipline, nor knowledge nor the efforts to freedom that liberate but Truth is what liberates you from all your conditioning and ignorance.

The overall significance of Shri Dharmasthala Manjunatheshwara University's Logo is:

Darkness of ignorance is destroyed by the flow of knowledge to bring Liberty to everyone, by realizing the truth. And, it should spread globally without the boundaries as hindrance.



SHRI
DHARMASTHALA
MANJUNATHESHWARA
UNIVERSITY

VISION

Shri Dharmasthala Manjunatheshwara University will set the highest standards of teaching and learning by awakening the intelligence of the students and nurturing the creativity hidden in them by creating an environment where the ancient wisdom blends with modern science, to transform them into whole human beings to face the challenges.

MISSION

- ▶ To ensure that the journey of education is inspiring, pleasant and enjoyable.
- ▶ Attract the best of teachers and students.
- ▶ Achieve high principles of trust, love and spirituality in the students.
- ▶ Create a collaborative, diverse and exclusive community.
- ▶ Transform the student of today to be a leader of tomorrow and a better human being.
- ▶ Produce passionate teachers.
- ▶ Evolve innovative teaching techniques.
- ▶ Create a peaceful environment.
- ▶ Prepare the student to face the social challenges.
- ▶ Create a University of which the Nation is proud of.
- ▶ Be an effective partner in Nation Building.
- ▶ Create an Eco-friendly University.
- ▶ Create a University based on the principles of beauty, love and justice.

||Om Shanti! Om Shanti! Om Shanti||



SHRI
DHARMASTHALA
MANJUNATHESHWARA
UNIVERSITY

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SDMU/Notif/110/45/2020

Date: 22.05.2020

NOTIFICATION

Affiliation for BPT & MPT Courses for the Year 2020-21

- Ref:
1. RGUHS Letter No. ACA/AFF/M-35/2019-20, Dated: 23-03-2019
 2. Govt. of Karnataka Notification No. ED 261 URC 2018, Dated: 19-12-2018
 3. Minutes of Academic Council Meeting of Shri Dharmasthala Manjunatheshwara University No. SDMU/AC/M-01/93/2019, Dated 20-03-2019
 4. Minutes of Board of Management Meeting of Shri Dharmasthala Manjunatheshwara University No. SDMU/BoM/M-02/94/2019, Dated 22-03-2019
 5. Minutes of Board of Governors Meeting of Shri Dharmasthala Manjunatheshwara University No. SDMU/BOG/M-02/95/2019, Dated 25-03-2019
 6. Shri Dharmasthala Manjunatheshwara University Notification of Affiliation for BPT & MPT Courses for the Year 2019-20, No. SDMU/Notif/268/2019, Dated: 12-07-2019

On the basis of the Reports of Local Assessment Committee dated 22-05-2020 and Letters of Permission from Govt. of Karnataka, Shri Dharmasthala Manjunatheshwara University grants affiliation for the academic year 2020-21, as per Section 35 (ii) of Karnataka Act No. 19 of 2018 (Shri Dharmasthala Manjunatheshwara University Act 2018), for conducting BPT course and the below listed PG Degree Courses at SDM College of Physiotherapy, Dharwad with an intake specified as mentioned below against each course, subject to fulfillment of conditions stipulated by the Government of Karnataka. This is, however, subject to compliance with the relevant rules, regulations and norms related to admissions notified by the university.

Sl. No.	Course / Program	Intake
Under Graduate Degree		
1	Bachelor of Physiotherapy	60
Post Graduate Degree		
1	MPT in Musculoskeletal Disorders & Sports	05
2	MPT in Neurological and Psychosomatic Disorders	05
3	MPT in Cardio-Respiratory Disorders	05
4	MPT in Community Physiotherapy	05
5	MPT in Pediatrics	05




Lt. Col. U. S. Dinesh (Retd.)^{MD,MIAC}
REGISTRAR
REGISTRAR,
Shri Dharmasthala Manjunatheshwara
University, Dharwad

To: 1. The Principal, SDM College of Physiotherapy, Dharwad

Copy to:

1. Hon'ble Chancellor, Shri Dharmasthala Manjunatheshwara University, Dharwad
2. Vice-Chancellor, Shri Dharmasthala Manjunatheshwara University, Dharwad
3. Principal Secretary, Department of Higher Education, Government of Karnataka
4. Principal Secretary, Department of Medical Education, Government of Karnataka
5. Principal Secretary, Department of Health & Family Welfare, Government of Karnataka
6. Chairman, University Grants Commission, New Delhi

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1. COURSE OUTLINE

The Master Degree in Physiotherapy is a two year regular program consisting of classroom teaching, clinical posting and self-academic activities. In the first year theoretical basis of physiotherapy which includes ethics, physiotherapeutics, clinical, physical and functional diagnosis, Principles of physiotherapy practice, evidence based practice is refreshed along with research biostatistics in physiotherapy. Also in 1 year students are rotated in all areas of clinical expertise for initial three months, then they will continue to be in their area of specialty. Candidates are required to choose their study for dissertation and submit a synopsis. In the second year candidates are required to complete and submit their dissertation. The learning program includes seminars, journal reviews, case presentations, case discussion, clinical demonstration and classroom teaching. The students are encouraged to attend conferences and workshops to enhance their knowledge during the course of study. University examinations are held at the end of each year.

2. SPECIALITIES OFFERED AND DEGREE AWARDED

1. Master of Physiotherapy in Musculoskeletal Disorders and Sports
2. Master of Physiotherapy in Neurological and Psychosomatic Disorders
3. Master of Physiotherapy in Cardio-Respiratory Disorders
4. Master of Physiotherapy in Community Physiotherapy
5. Master of Physiotherapy in Paediatrics

3. GOALS OF COURSE

1. Preparation of a postgraduate student towards his/her professional autonomy with self-regulating discipline at par with global standards.
2. Formation of bases of the professional practice by referral as well as first contact mode using evidence-based practice.
3. Impartation of research basis in order to validate techniques & technology in practice to physiotherapy.
4. Acquainting a student with concept of quality care at institutional as well as community levels.

5. Inculcation of appropriate professional relationship in multidisciplinary set up, patient management and co-partnership basis.
6. Preparation of students to address problems related to health education and community physiotherapy.
7. Practicing the concept of protection of rights of the community during referral as well as first contact practice.
8. Incorporation of concept of management in physiotherapy
9. Experience in clinical training and undergraduate teaching partly.
10. Providing honest, competent and accountable physiotherapy services to the community
11. On successful completion of M.P.T programme, the Physiotherapist professional will be able to take up teaching assignments independently for undergraduate teaching programme. They will be able to prepare project proposal with selected research design and interpret the evaluated outcome measures (using sound data processing techniques and statistical methods). They will be able to practice in their specialty area with advanced knowledge and skills.

4. ELIGIBILITY FOR ADMISSION

1. Candidates who have passed BPT degree from institutions where the mode of study is a full time program, from this university or any other university in India or abroad as equivalent with not less than 50% of marks in aggregate and have completed 6 months of compulsory rotating internship will be eligible. Candidates who have passed BPT through correspondence or Distance Education program are not eligible.
2. Candidate has to furnish at the time of submission of application form, a certificate of physical fitness from a registered medical practitioner and two references from persons other than relatives testifying a satisfactory general character.
3. Admission to Masters of Physiotherapy course shall be made on the basis of eligibility and an entrance test will be conducted for the purpose.
 - a. Entrance test to be conducted as per the syllabus prescribed by the Shri Dharmasthala Manjunatheshwara University.

- b. Successful candidates on the basis of written test will be called for an interview
- c. During subsequent counselling (s) the seat will be allotted as per the merit of the candidate depending on the availability of seats.
- d. Candidate who fails to attend the entrance test on the notified date(s) will forfeit the claim for admission and placement in the waiting list except those permitted by the competent authority under special circumstances.

5. OBTAINING ELIGIBILITY CERTIFICATE

No candidate shall be admitted for the postgraduate degree course unless the candidate has obtained and produced the eligibility certificate issued by Shri Dharmasthala Manjunatheshwara University, Dharwad. The candidate has to make the application to the university with the following documents along with the prescribed fee.

- 1. Bachelor of physiotherapy provisional / degree certificate issued by the respective university.
- 2. Marks cards of all the university examinations passed.
- 3. Completion of internship certificate.
- 4. Proof of SC/ST or category-I as the case may be.

A candidate who has been admitted to postgraduate course should register his/her name in the University within a month of admission after paying the registration fee.

Candidate should obtain the eligibility certificate before the last date for admission as notified by the university.

6. INTAKE OF STUDENTS

The intake of students to the course shall be in accordance with the ordinance in this behalf. The guide student ratio should be 1:3

7. DURATION OF THE COURSE

The duration of Master of Physiotherapy course including submission of dissertation on the topic registered shall be of 24 months (two continuous Years) on a full-time basis from the commencement of academic term. Any breach in this, power of extension of the course and the fixation of the term shall be vested with the University.

8. NUMBER OF APPEARANCES

Candidate registered for two years post graduate degree course should qualify in the examination within four years of date of admission. The candidate has to reregister for the course if they fail to complete within this stipulated time.

9. MEDIUM OF INSTRUCTION

English will be the medium of instruction for the subjects of study and for the examination of the MPT course.

10. COURSE CONTENT & STRUCTURE

The course subjects will be outlined under two major headings –
Common Subjects for all students (Paper I & Paper II) and Subjects of Specialty (Paper III, IV, V)

COURSE CONTENT
MPT PART I (0-12 Months)

SI No	Subject Code	Paper	Subjects	Marks
1	MPT1151	I	Physiotherapy Research, Biostatistics, Ethics	100
2	MPT1152	II	Principles of Physiotherapy Practice and	100
3	MPTF1153	III	1) Clinical, Physical and Functional Diagnosis in Musculoskeletal Disorders and Sports	100
	MPTF1154		2) Clinical, Physical and Functional Diagnosis in Neurological and Psychosomatic Disorders	
	MPTF1155		3) Clinical, Physical and Functional Diagnosis in Physiotherapy in Cardio- Respiratory Disorders	
	MPTF1156		4) Clinical, Physical and Functional Diagnosis in Community Physiotherapy	
	MPTF1157		5) Clinical, Physical and Functional Diagnosis in Paediatrics	

MPT PART II (13-24 Months)

Sl No	Subject Code	Paper	Speciality Subjects	Marks
1	MPTS1161	IV	a. Physiotherapy in Musculoskeletal Disorders and Sports	100
	MPTS1163		b. Physiotherapy in Neurological and Psychosomatic Disorders	
	MPTS1165		c. Physiotherapy in Cardio-Respiratory Disorders	
	MPTS1167		d. Physiotherapy in Community Physiotherapy	
	MPTS1169		e. Physiotherapy in Paediatrics	
2	MPTE1162	V	1. Recent advances & Evidence Based Practice in Musculoskeletal Disorders and Sports	100
	MPTE1164		2. Recent advances & Evidence Based Practice in Neurological and Psychosomatic Disorders	
	MPTE1166		3. Recent advances & Evidence Based Practice in Physiotherapy in Cardio-Respiratory Disorders	
	MPTE1168		4. Recent advances & Evidence Based Practice in Community Physiotherapy	
	MPTE1170		5. Recent advances & Evidence Based Practice in Paediatrics	

COURSE STRUCTURE (in Hours)

MPT I YEAR

EACH SUBJECT	THEORY	PRACTICAL	TOTAL
Physiotherapy Research, Biostatistics, Ethics & Evidence Based Practice	150	50	200
Principles of Physiotherapy Practice and Physiotherapeutics	150	100	250
1. Clinical, Physical and Functional 2. Diagnosis in Musculoskeletal Disorders and Sports 3. Clinical, Physical and Functional Diagnosis in Neurological and Psychosomatic Disorders 4. Clinical, Physical and Functional Diagnosis in Physiotherapy in Cardio-Respiratory Disorders 5. Clinical, Physical and Functional Diagnosis in Community Physiotherapy 6. Clinical, Physical and Functional Diagnosis in Paediatrics	150	200	350
Clinicals	-	-	1000
Seminar	-	-	150
Journal	-	-	100
			2050

MPT II YEAR

EACH SPECIALITY SUBJECT	THEORY	PRACTICAL	TOTAL
1. Physiotherapy in Musculoskeletal Disorders and Sports			
2. Physiotherapy in Neurological and Psychosomatic Disorders			
3. Physiotherapy in Cardio-Respiratory Disorders	150	250	400
4. Physiotherapy in Community Physiotherapy			
5. Physiotherapy in Paediatrics			
1. Recent advances & Evidence Based Practice in Musculoskeletal Disorders and Sports			
2. Recent advances & Evidence Based Practice in Neurological and Psychosomatic Disorders			
3. Recent advances & Evidence Based Practice in Physiotherapy in Cardio-Respiratory Disorders			
4. Recent advances & Evidence Based Practice in Community Physiotherapy	150	200	350
5. Recent advances & Evidence Based Practice in Paediatrics			
Clinicals	-	-	1000
Seminar	-	-	150
Journal	-	-	100
Research club	-	-	50
			2050

Participation in departmental activities

- | | |
|---|------------------------------|
| a. Journal presentations | Minimum 4 in 2 years |
| b. Seminars | Minimum 4 in 2 years |
| c. Clinical Presentations | Minimum 30 in 2 years |
| d. Special clinics | Minimum 20 in 2 years |
| e. Community work /camps/ field visits | Minimum 4 in 2 years |
| f. Clinical rounds | Minimum 250 in 2 years |
| g. Dissertation work | Minimum 200 hours in 2 years |
| h. Technique demonstration | Minimum 2 in 2 years |
| i. Participation in conferences/
Presentation of paper | Optional |

11. METHODS OF TRAINING

The training of postgraduate for MPT degree shall be on a full time pattern with graded responsibilities in the management and treatment of patients. The participation of all the students in all facets of educational process is essential. Every candidate should take part in seminars, group discussions, clinical rounds, care demonstrations, clinical care, journal review meetings, clinical education & CME. Every candidate should be required to participate in the teaching and training programs of undergraduate students. Training should include involvement in practical/or laboratory experimental work and research studies.

12. MONITORING PROCESS OF STUDIES (INTERNAL MONITORING)

It is essential to monitor the learning progress of each candidate through continuous appraisal and regular assessment. It not only helps teachers to evaluate students, but also students to evaluate themselves. The monitoring is done by the staff of the department based on participation of students in various teaching / learning activities. It may be structured and assessment be done using checklists that assess various aspects of learning critical thinking and clinical skills.

13. Model Checklist for PG activities are given in the table 1 to 8 which may be copied and used

14. Work diary: Every candidate 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/ practical/laboratory procedures, if any conducted by the candidate. The work diary shall be scrutinized and certified by the Head of the Department and Head of the Institution and presented in the university examination.

15. ATTENDANCE

A candidate is required to attend a minimum of 80% of training and of the total classes conducted during each academic year of the MPT course. Provided further, leave of any kind shall not be counted as part of academic term without prejudice to minimum 80% of training period every year. Any student who fails to complete the course in this manner shall not be permitted to appear the University Examinations.

16. DISSERTATION

Every candidate pursuing MPT degree course is required to carry out 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.

The dissertation is aimed to train a graduate student in research methods and techniques. It includes identification of a problem, formulation of a hypothesis search and review of literature getting acquainted with Evidence Based Practice, designing of a research study, collection of data, critical analysis, and comparison of results and drawing conclusions.

Once the synopsis is accepted, students need to obtain institutional Ethical Clearance Committee approval following which they can carry out their dissertation work.

Every candidate must submit a synopsis of proposed dissertation work to the registrar of the university within four months of the date of commencement of the

course. The synopsis shall be sent through the proper channel. Such synopsis will be reviewed and the university will register the dissertation topic.

Postgraduate should present the progress report of their dissertation to the respective guide/ s and Co guide/ s once in every 2 months.

Dissertation should be completed and the dissertation book should be submitted 3 months before the university examination scheduled.

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.

Dissertation format

1. Introduction
2. Aims or objectives of study
3. Review of literature
4. Material and methods
5. Results
6. Tables
7. Discussion
8. Conclusion
9. References
10. Appendices/Annexure

The written text of dissertation shall not be less than 50 pages and shall not exceed 100 pages excluding references, tables, questionnaires and other annexure. It should be neatly typed in double line spacing on one side of paper (A4 size, 8.27" x 11.69") and bound properly. Spiral binding should be avoided. The guide, head of the department and head of the institution shall certify the dissertation.

Four hard copies and one soft copy of dissertation thus prepared shall be submitted to the Registrar (Evaluation), three months before final examination on or before the dates notified by the university. The examiners appointed by the university shall evaluate the dissertation. Approval of dissertation work is an

essential precondition for a candidate to appear in the university examination. The dissertation shall be valued by three evaluators of same specialty, two externals (outside the university) and the other will be internal (from the same university other than the guide). Any two evaluator's acceptance will be considered as a precondition for eligibility to take up the examination. If any suggestions/ corrections are recommended, the candidate shall resubmit with corrections before appearing for the examination.

17. PLAN FOR DISSERTATION

Event
Orientation
Workshop on research methodology
Proposal writing/protocol writing
Synopsis review
Submission of synopsis
Ethical clearance
Data collection to start
1st review of data
2nd review of data
3rd review of data
Thesis presentation
Submission

18. GUIDE

Criteria for recognition of MPT teacher / guide

1. MPT with five years and above teaching experience working in a full time position at a recognized institution and should have experience in same specialty.
2. The age of guide / teacher shall not exceed 65 years.
3. The guide student ratio should be 1: 3 in the same specialty.
4. For any new specialty apart from mentioned in serial no 2 of Regulation and Curriculum, relaxation for the criteria 1 and 2 mentioned above will be considered in view of acute shortage of teachers, the persons having three years post MPT teaching experience working on a full time basis may be considered as P.G. teacher. Similarly persons with maximum age of

66 years may be considered for being guide and examiner in cases of acute shortage of examiners until further amendments by the University in this regard.

5. For the subjects other than physiotherapy, classes will be taken by the staff qualified in that particular field.

19. CHANGE OF GUIDE

For change of guide in extra ordinary situations, a suitable guide will be provided from within the concerned department, Principal or HOD of the department will be given the responsibility. In absence of all, the registered PG may be allotted under the senior most professor or Head of the institute with prior permission from the university.

20. ELIGIBILITY CRITERIA FOR APPEARING UNIVERSITY EXAM

MPT PART I-

1. 80% attendance in lectures/ clinicals separately.
2. 60% marks in each seminar, journal, and case presentation.

MPT PART II-

1. Dissertation should be submitted 3 months before University exam.
2. 80% attendance in lectures/ clinicals separately.
3. 60% marks in seminar, journal, and case presentation all together.

21. A. SCHEDULE OF EXAMINATION

The University shall conduct examination for MPT Part I at the end of First academic year and MPT Part II at the end of Second academic year respectively. The examination shall be known as MPT Final examination Part I and MPT Final examination Part II. A student shall register in all the 3 papers in MPT Part I (2 non-specialties and one specialty) and 2 specialty papers in MPT Part II when they appear for the first time.

B. PARTICULARS OF THEORY QUESTION PAPERS AND DISTRIBUTION OF MARKS

A written examination consisting of three question papers each of three hours duration and each paper carrying 100 marks will be given in MPT final examination Part I.

A written examination consisting of two question papers each of three hours duration and each paper carrying 100 marks will be given in MPT final examination Part II.

Paper I & Paper II will be common subjects for all the specialties.

Paper III, Paper IV & Paper V will be specialty subject chosen by the candidate.

22. SCHEME OF EXAMINATION

Type of Assessment		Maximum Marks	
		MPT Part I	MPT Part II
Theory			
Theory	Paper – I	100	-
	Paper – II	100	-
	Paper – III	100	-
	Paper – IV	-	100
	Paper - V	-	100
Practical	Clinical	100	150
	Dissertation	-	50
	Microteaching	-	10
	Viva-Voce	50	40
Total		450	450
Grand total		900	

23. Pattern of Question paper for theory examination in each specialization.

Type of Questions	No. of Questions to be asked	No. of Questions to be answered	Marks for each Questions	Total
Long Essay	2	2	2 X 20	40
Short Essay	6	6	6 X 10	60
Total				100

24. PRACTICAL MARKS AND SCHEDULE MPT Part I Practical / Clinical - 150 Marks

Note: All cases for clinical examination should be on patients & not on models.

Day 1

1. Case (1) – 1 x 50 = 50 Marks (SPECIALIZATION CASE)
2. Case (2) – 1x 50 = 50 Marks (NON SPECIALIZATION CASE)

Viva – Voice - 50 Marks

MPT Part II Practical/clinical - 150 Marks

Day 1

1. Long case- 1x 100=100- (SPECIALIZATION CASE)
2. Short case- 1x50=50 (SPECIALIZATION CASE)

Day 2

Viva-Voce - 40 Marks

Dissertation - 50 Marks

Micro teaching - 10 Marks

25. PARTICULARS OF VIVA VOCE

Viva- Voce examination shall aim at assessing depth of knowledge, critical thinking, logical reasoning, confidence & oral communication skills.

26. CRITERIA FOR PASSING

The examination for MPT will be held at the end of each academic year.

Obtaining aggregate of 50% marks (40 % minimum in each paper) in „Theory“ as well as „Practical“ separately shall be mandatory for passing an examination.

MPT PART I

1	Theory	
	Number of Theory papers	3
	Marks for each Theory paper	100
	Total marks for Theory paper	300
	Minimum Passing for Theory	150/300 (40 % minimum in each paper)
2	Practical	100
3	Viva	50
	Minimum Passing for practical's + Viva	50+25=75/150

MPT PART II

1	Theory	
	Number of Theory papers	2
	Marks for each Theory paper	100
	Total marks for Theory paper	200
	Minimum Passing for Theory	100/200 (40 % minimum in each paper)
2	Practical	150
3	Viva Voce + Micro teaching + Dissertation Viva	40+ 10+50= 100
	Minimum Passing for practical's + Viva Voce + Micro teaching + Dissertation Viva	75+50=125/250

Minimum Passing:

The candidate shall secure not less than 50 % marks in Theory & Practical's including Viva (Viva Voce + Dissertation Viva+ Micro teaching) separately which includes

- a. Theory – Aggregate 50 % (in addition, in each theory paper a candidate has to secure a minimum of 40 %)
- b. Practical & Viva - aggregate 50 %
- c. If any candidate fails either in theory or practical, they have to reappear for both (Theory & Practical)
- d. Supplementary exam will be held within 6 months. Candidate will be allowed to appear MPT Part II exam only if candidate clears MPT Part I Exam.
- e. If the candidate fails in Paper I (<40%) and passes in Paper II and Paper III, the candidate shall reappear only for paper I.
- f. If the candidate fails in Paper II or Paper III or both (<40%), the candidate shall reappear for both the papers.
- g. If the candidate fails in Paper I, II and III, the candidate shall reappear for all three Papers.
- h. If the candidate fails in Paper IV or Paper V or both, the candidate shall reappear for both the papers.

27. EXAMINERS

The examiner should be a PG Guide and should have 5 years and above teaching experience post MPT

MPT I- There shall be two examiners- one of them shall be an external from a recognized institute outside SDM University and other shall be an internal from Shree Dharmasthala Manjunatheshwara University from the same specialty.

MPT –II - There shall be two examiners- one of them shall be an external from a recognized institute outside SDM University and other shall be an internal from Shree Dharmasthala Manjunatheshwara University from the same specialty.

28. DECLARATION OF CLASS

- a. A candidate having appeared in all the subjects in the same examination and passed that examination in the first attempt and secures 75% of marks or more of grand total marks prescribed will be declared to have passed the examination with Distinction.
- b. A candidate having appeared in all subjects in the same examination and passed that examination in the first attempt and secures 65% of marks or more but less than 75% of grand total marks prescribed will be declared to have passed the examination in First Class.
- c. A candidate having appeared in all the subjects in the same examination and passed that examination in the first attempt and secures 50% of marks or more but less than 65% of grand total marks prescribed will be declared to have passed the examination in Second Class.
- d. A candidate passing the university examination in more than one attempt shall be placed in Pass class irrespective of the percentage of marks secured by him/her in the examination.

29. GRADED RESPONSIBILITY IN CARE OF PATIENTS AND OPERATIVE WORK

Category	I year MPT	II year MPT
O	30 cases	-
A	30 cases	40 cases
PA	125 cases	95 cases
PI	50 cases	90 cases

Key: O- Observes

A - Assisted a Physiotherapist in performing procedure

PA - Performed procedure under direct supervision of a senior Physiotherapist

PI - Performed procedure independently

The case assessment books should be submitted before appearing for the exams.

Teaching activities – UG Teaching

Learning activities – Self Learning, Use of computers and library

TABLE-1
EVALUATION OF JOURNAL REVIEW PRESENTATIONS

Name of the Student :

Name of the faculty/observer :

Date :

Sl.No	Items for observation during presentation	Poor (0)	Below Average (1)	Average (2)	Good (3)	Very Good (4)
1	Article chosen					
2.	Extent of understanding the scope & objectives of the paper by the candidate					
3.	Whether other relevant publications / Cross References have been consulted.					
4.	Ability to respond to questions on the paper/subject					
5.	Audio-Visual aids used					
6.	Ability to defend the paper					
7.	Clarity of presentation					
8.	Level of interaction with audience by the candidate					
9.	Were appropriate critical appraisal tools used?					
10.	Overall performance					
	Total Score					

_____ / 40

Remarks/ suggestions:

Name & Signature of Moderators

TABLE-2
EVALUATION OF SEMINAR PRESENTATIONS

Name of the Student :

Name of Faculty /Observer :

Date :

Sl. No	Items for observation during presentation	Poor (0)	Below Average (1)	Average (2)	Good (3)	Very Good (4)
1	Whether relevant reviews/ reviews/publications consulted					
2	Whether up to date evidences have been consulted					
3	Completeness of preparation					
4	Clarity of presentation					
5	Understanding of subject					
6	Ability to answer questions					
7	Time scheduling					
8	Appropriate use of Audio-Visual aids					
9	Overall performance					
10	Level of interaction with audience					
	Total Score					

_____ / 40

Remarks/ suggestions :

Name & Signature of Moderators :

TABLE-3
EVALUATION OF CLINICAL / OPD WORK

Name of the Student :

Name of Faculty /Observer :

Date :

Sl. No	Points to be considered	Poor (0)	Below Average (1)	Average (2)	Good (3)	Very Good (4)
1.	Regularity of attendance					
2.	Punctuality					
3.	Interaction with colleagues and supportive staff					
4.	Maintenance of case records					
5.	Presentation of cases during rounds					
6.	Investigations of workup					
7.	Bedside manners					
8.	Rapport with patients					
9.	Treatment approaches & techniques					
10.	Overall quality of ward/ OPD work					
	Total Score					

_____ / 40

Remarks/ suggestions:

Name & Signature of Posting In-charge :

TABLE-4
EVALUATION FOR CLINICAL PRESENTATION

Name of the Student :

Name of Faculty /Observer :

Date :

Sl. No	Points to be considered	Poor (0)	Below Average (1)	Average (2)	Good (3)	Very Good (4)
1.	Completeness of History					
2.	Whether all relevant points elicited					
3.	Clarity of presentation					
4.	Logical order					
5.	Mentioned all positive and negative points of importance					
6.	Accuracy of general physical examination					
7.	Whether all physical signs missed or misinterpreted					
8.	Diagnosis-Whether it follows logically from history & findings					
9.	Investigations required Special investigation					
10.	AIMS					
11.	MEANS					
12.	Treatment Techniques					
13.	EBP/ Evidence Informed Practice of evaluation / treatment / outcome					
14.	Others					
	Grand Total					

_____ / 56

Remarks/ suggestions :

Name & Signature of Posting In-charge :

TABLE-5
EVALUATION OF TEACHING SKILL PRACTICE

Name of the Student :

Name of Faculty /Observer :

Date :

Sl. No	Details	Strong Point	Weak Point
1.	Communication of the purpose of the talk		
2.	Evokes audience interest in the subject		
3.	The introduction		
4.	The sequence of ideas		
5.	The use of practical examples & or illustrations		
6.	Speaking style (enjoyable, monotonous, etc.,-Specify)		
7.	Attempts audience participation		
8.	Summary of the main points at the end		
9.	Ask s questions		
10.	Answer questions asked by the audience		
11.	Rapport of speaker with the audience		
12.	Effectiveness of the talk		
13.	Uses Audio visual aids appropriately		

Name & Signature of faculty

TABLE-6
EVALUATION FOR SYNOPSIS / DISSERTATION PRESENTATION

Name of the Student :

Name of Faculty /Observer :

Date :

Sl. No	Points to be considered	Poor (0)	Below Average (1)	Average (2)	Good (3)	Very Good (4)
1.	Selection of Topic					
2.	Need of the study					
3.	Statement of hypothesis					
4.	Review of literature					
5.	Selection of research design and ethical clearance					
6.	Selection of appropriate sample size and sampling technique					
7.	Selection of appropriate statistical tool					
8.	Selection of appropriate outcome measures and quality of protocol					
9.	Logical sequence of presentation					
10.	Answer questions asked by evaluators					
	Total Score					

_____ / 40

Remarks:

Name & Signature of the faculty :

TABLE-7
EVALUATION OF THERAPY/DEMONSTRATION SESSIONS

Name of the Student :

Name of Faculty /Observer :

Date :

Sl. No	Items for observation during presentation	Poor (0)	Below Average (1)	Average (2)	Good (3)	Very Good (4)
1.	Competence of Preparation					
2.	Clarity of presentation					
3.	Logical order					
4.	Accuracy of technique demonstration					
5.	Extent of Understanding by Presenter					
6.	Time Scheduling					
7.	Ability to respond to questions					
8.	Supervision & clearing doubts					
9.	Level of Interaction form audience					
10.	Overall performance					
	Total					

_____ / 40

Remarks/ suggestions:

Name & Signature of Posting In-charge :

TABLE-8
CONTINUOUS EVALUATION OF DISSERTATION WORK BY GUIDE/ CO- GUIDE

Name of the Student :

Name of Faculty /Observer :

Date :

Sl. No	Items for observation	Poor (0)	Below Average (1)	Average (2)	Good (3)	Very Good (4)
1.	Periodic consultation with guide					
2.	Regular collection of case material					
3.	Depth of analysis / discussion					
4.	Departmental presentation of findings					
5.	Quality of final output					
	Total Score					

_____ /20

Remarks:

Signature of Guide:

Signature of Co-Guide: _

Signature of Dean / Principal / HOD:

MPT SYLLABUS

1ST YEAR MPT COMMON SUBJECTS TO ALL SPECIALITY		
TITLE OF THE PAPER I : PHYSIOTHERPAY RESEARCH, BIostatISTICS, ETHICS AND EVIDENCE BASED PRACTICE		
Duration : 0 - 12 months Teaching Scheme Theory : 150 Hours Practical : 50 Hours		
LEARNING OBJECTIVES		
1	Able to undertake independent research in the field of physiotherapy	
2	To provide students with detailed training for research theory/philosophy, sampling, research design, Descriptive/inferential statistics, power, error, estimation, reliability, validity, and reading a journal article.	
3	Learn Ethical codes of Physiotherapy Practice, its moral & legal aspects.	
4	Employ critical thinking, self-reflection, and evidence-based practice to make clinical decisions about physical therapy services Knowledge of various types of study designs and planning for the same	
5	Acquire Professionalism and management skills in planning, implementation and administration in clinical practice (service / self-employment) and academic activities including the skill of <u>documentation and use of information technology in professional practice.</u>	
Course Description - Theory		
A) PHYSIOTHERAPY RESEARCH		
SI No	Content	Hours
1	Introduction to research	01
2	Types of research	02
3	Defining a research question	02
4	Qualitative study designs-Grounded theory and Phenomenological methods.	03
5	Use of Delphi process	02
6	Quantitative study	05
7	Study design types: Case study, Case series, longitudinal cohort, Pre post design, Time series design, Repeated measures design, Randomized control design. Retrospective design, Cross sectional design Sequential clinical design, Experimental design, Superiority trials, Non-inferiority trials	05

8	Sampling design, calculating minimum sample size based on design	06
9	Measurement & scaling techniques.	06
10	Selection criteria for outcome measures in Health Sciences (Physiotherapy and Rehabilitation)	05
11	Research Methods: Designing methodology, Reporting results, Type I and Type II bias.	07
12	Communicating research.	03
B) Evidence Based Practice		
Sl No	Content	Hours
1	Evaluating published research: Critical appraisal of scientific literature and looking at the evidence	05
2	Introduction to Evidence based Medicine and Evidence based practice, and Evaluating evidence.	04
3	Asking clinical questions and appraising evidence	05
4	Translating of evidence into practice: strategies	02
5	Use of clinical practice guidelines, clinical pathways, clinical prediction rules to inform practice.	02
6	Use of Standardized scales and tests in various assessments. Pyschometric properties, Interpretation in Physiotherapy practice and placebo effect in clinical trials.	05
7	Review of scientific methods.	02
8	Evidence Informed Practice	02
C) BIOSTATISTICS		
Sl No	Content	Hours
1	Introduction to biostatistics.	02
2	Source and presentation of data.	02
3	Measures of location, average and percentile.	02
4	Measures of central tendency, Tests of normality.	02
5	Probability and sampling distributions.	02
6	Variability and its measures.	03
7	Normal distribution and normal curve.	03
8	Measures of population and statistics.	03
9	Measurement: Properties of measurement: reliability, validity, responsiveness, Minimal Clinically Important Difference (MCID).	05
10	Role of Pilot study in research.	02
11	Data analysis: descriptive and inferential statistics, correlations and hypothesis testing.	04

12	Tests of comparison\tests of correlation, Goodness of fit, Chi square test.	04
13	Quantitative data analysis: revision of descriptive and inferential statistics, correlations and hypothesis testing, general linear model, Regression analysis, power and effect.	05
14	Analysis of variance and covariance multivariate designs, nonparametric data analysis and selection of nonparametric tests.	03
15	Epidemiological analysis – odds ratio, risk ratio.	02
16	Qualitative data analysis: major qualitative methodologies, techniques in data collection and analysis.	03
17	Understanding Systematic review and Meta-analysis.	03
18	Role of computers in research -Tabulation using software packages.	03
19	Protocol writing, Manuscript writing.	02
D) ETHICS		
Sl No	Content	Hours
1	Introduction, History & General Principles of ethics involving human participants	02
2	Ethical consideration in Health Sciences practice (physiotherapy) - State, National & international rules & regulations governing Health Sciences practice (physiotherapy).	02
3	Ethical codes and conduct for Health professional (physiotherapy).	02
4	Informed consent process	02
5	Good clinical practices (GCP)	02
6	Ethical review procedures- protocol writing, ethical committee.	02
7	Influence of values & valuing on patient care	01
8	Ethical issues in practice of Health Science (physiotherapy).	02
9	Leadership, administration, management, and professionalism skills in Health Science (Physiotherapy)	03
10	Scope of consumer protection act in health care	03

Recommended Reading for Physiotherapy Research, Biostatistics, Ethics and Evidence Based Practice

1. Gabard, D. L., & Martin, M. W. (2010). Physical therapy ethics. FA Davis
2. Carter, R., & Lubinsky, J. (2015). Rehabilitation research: principles and applications. Elsevier Health Sciences.
3. Feters, L., & Tilson, J. (2018). Evidence based physical therapy. FA Davis.
4. Jewell, D. V. (2017). Guide to evidence-based physical therapist practice. Jones & Bartlett Publishers.
5. Hicks, C. M. (2009). Research methods for clinical therapists: applied project design and analysis. Elsevier Health Sciences.
6. Greenhalgh, T. (2019). How to Read a Paper: The Basics of Evidence-based Medicine and Healthcare. Wiley- Blackwell.
7. Watkins, M. P., & Portney, L. (2009). Foundations of clinical research: applications to practice. Upper Saddle River, NJ: Pearson/Prentice Hall.
8. Evans I, Thornton H, Chalmers I and Glasziou P (2011). Testing Treatments, 2nd Edition; London: Pinter and Martin.
9. Khanal, A. B. (2016). Mahajan's Methods in Biostatistics for Medical Students and Research Workers. Jaypee Brothers Medical P.
10. Kuzma, J. W., & Bohnenblust, S. E. (2004). Basic statistics for the health sciences. (5th ed.). Boston: McGraw Hill.
11. Munro, B. H. (1997). Statistical methods for health care research (3rd ed.). Philadelphia: Lippincott.
12. Jenkins, S., Price CJ, & Straker L. (1998). The researching therapist. A practical guide to planning, performing and communicating research. Edinburgh: Churchill Livingstone.
13. Kettenbach, G., & Schlomer, S. L. (2016). Writing patient/client notes: ensuring accuracy in documentation. FA Davis.
14. Swisher, L. L. D., & Page, C. G. (2005). Professionalism in physical therapy: History, practice, and development. Elsevier Health Sciences.
15. Metcalf, V. A. (1983). Physical Therapy Administration and Management.
16. Kothari, C. R. (2004). Research methodology: Methods and techniques.
17. Kaushal AK. Medical negligence and legal remedies with special reference to the consumer protection law. New Delhi Universal Book Traders, 1995. p. 23-24.
18. Stokes, E. K. (2011). Rehabilitation outcome measures (pp. 27-32). Edinburgh: Churchill Livingstone.
19. Hack, L. M., & Gwyer, J. (2013). Evidence into Practice: Integrating Judgment, Values and Research. FA Davis.
20. <https://www.icmr.nic.in/guidelines>

1ST YEAR MPT COMMON SUBJECTS TO ALL SPECIALITY		
TITLE OF THE PAPER II : PRINCIPLES OF PHYSIOTHERAPY PRACTICE AND PHYSIOTHERAPEUTICS		
Duration : 0 - 12 months Teaching Scheme Theory: 150 Hrs Practical: 100 Hrs		
LEARNING OBJECTIVES		
<ol style="list-style-type: none"> 1. Able to execute all routine physiotherapeutic procedures with evidence based practice 2. Able to be a prominent member of the multidisciplinary physiotherapy team and treat all the conditions which need physiotherapeutic procedures 3. Able to provide adequate knowledge about the treatment procedures and benefit. 4. Learn multidisciplinary practice skills 5. Able to practice and assess patient independently. 		
Course Description- Theory		
Sl No	Content	Hours
1	Anatomy and physiology of peripheral nerve, muscle and neuromuscular junction.	02
2	Electrical properties of muscle and nerve.	02
3	Basic concepts in biomechanics	02
4	Biomechanics of bone, cartilage, tendon & ligaments, muscles	03
5	Biomechanics & Pathomechanics of respiration and circulation.	02
6	Biomechanics & Pathomechanics of integrated function- Gait, Posture, Spine, Peripheral Joints, Activities of daily living, Hand function.	10
7	Instrumentation for neuromuscular electrical stimulation	02
8	Muscles plasticity in response to electrical stimulation.	02
9	Electrical stimulation and its effects on various systems.	02
10	Sources of Energy, Energy Transfer and Energy Expenditure at rest and various physical activities.	02
11	Responses and Adaptations of various systems to different types of Exercise and training.	03
12	Environmental influence on Performance.	02
13	Body consumption, nutrition and caloric balance and performance.	02
14	Considerations of age and gender in exercise and training.	04
15	Fatigue classification, assessment, management and scientific organization of work-rest regime to control fatigue.	04
16	Energy consumption MET value of various exercises and activity.	02

17	Role of nutrition and diet in physiotherapy.	05
18	History taking, assessment tests, Patient Communication, documentation of findings, treatment planning and organization.	05
19	Documentation of rehabilitation assessment and management using International Classification of Functioning Disability and Health(ICF)	04
20	Pain -modulation and management of pain	05
21	Women's Health and physiotherapy.	05
22	Geriatric Rehabilitation & theories of aging.	05
23	Exercise planning and prescription for health and fitness with special emphasis to Musculoskeletal pain, Cardiovascular disease, Pregnancy, Postpartum, Obesity, Hypertension and Diabetes.	10
24	Neurological approaches used in Rehabilitation to include theories of motor control and motor	04
25	EMG,NCV, Biofeedback methods and usage	08
26	Manual therapy–different schools of thought– Principle sand techniques.	05
27	General Guidelines in Cardiac Rehabilitation, Pulmonary Rehabilitation	05
28	Burns Rehabilitation and Cancer Rehabilitation Protocol management.	04
29	Integumentary/Wound Management	04
30	CPR, monitoring systems and defibrillators and artificial respirators.	02
31	Sensory and Motor Re-education	02
32	Principles of Paediatric Physiotherapy, approaches and management.	05
33	Musculoskeletal Physiotherapy-guidelines in trauma care, soft tissue injury and rheumatology care	05
34	Physiotherapy in Psychiatric conditions.	02
35	Yoga a. Concept of Yogic Practices– Kinds of Yogic Practices, Asana, Pranayama. b. Asana: Definition, Scope and Limitations of Asanas– Classification of Asanas–Safety Measures and Precautions while performing Asanas c. Pranayama: Meaning –Different Phases in Pranayama Practice Safety Measures and Precautions.	05

36	Ergonomics: a. Introduction, History b. Job/ task/ site Analysis c. Work hardening & conditioning program d. Work related injuries educational programmes for prevention of work related injuries	03
37	Recovery of function, Neural plasticity & neural control of locomotion	02
38	Principles of sports injury, prevention and management	05
39	Bladder & bowel management.	02
40	Amputations -Assessment and Management	02

Recommended Reading for Principles of Physiotherapy Practice and Physiotherapeutics

1. O'Sullivan, S. B., Schmitz, T. J., & Fulk, G. (2019). Physical rehabilitation. FA Davis
2. Cifu, D. X. (2015). Braddom's physical medicine and rehabilitation. Elsevier Health Sciences.
3. Houglum, P. A., & Bertoti, D. B. (2011). Brunnstrom's clinical kinesiology. FA Davis.
4. Augustine, J. R. (2008). Human neuroanatomy. Academic Press.
5. Lusardi, M. M., Jorge, M., & Nielsen, C. C. (2013). Orthotics and prosthetics in rehabilitation. Elsevier Health Sciences.
6. David, J., MAGEE, M., & ROBERT, C. (2020). ORTHOPEDIC PHYSICAL ASSESSMENT. Saunders.
7. Kisner, C., Colby, L. A., & Borstad, J. (2017). Therapeutic exercise: Foundations and techniques. Fa Davis.
8. Goodman, C. C., Heick, J., & Lazaro, R. T. (2017). Differential Diagnosis for Physical Therapists-E-Book: Screening for Referral. Elsevier Health Sciences.
9. Neumann, D. A. (2013). Kinesiology of the musculoskeletal system-e-book: foundations for rehabilitation. Elsevier Health Sciences.
10. American College of Sports Medicine, Riebe, D., Ehrman, J. K., Liguori, G., & Magal, M. (2018). ACSM's guidelines for exercise testing and prescription. Wolters Kluwer.
11. Loudon, J. K., Manske, R. C., & Reiman, M. P. (2018). Clinical mechanics and kinesiology. Human Kinetics.
12. Martin, S. T., & Kessler, M. (2015). Neurologic interventions for physical therapy. Elsevier Health Sciences.

13. Donatelli, R. A., & Wooden, M. J. (2009). *Orthopaedic Physical Therapy-E-Book*. Elsevier health sciences.
14. Cameron, M. H. (2017). *Physical Agents in Rehabilitation-E Book: An Evidence-Based Approach to Practice*. Elsevier Health Sciences.
15. Avers, D., & Brown, M. (2018). *Daniels and Worthingham's Muscle Testing: Techniques of Manual Examination and Performance Testing*. Elsevier Health Sciences.
16. Kimura, J. (2001). *Electrodiagnosis in diseases of nerve and muscle: principles and practice*. Oxford university press.
17. Lee, H. J., & DeLisa, J. A. (2005). *Manual of nerve conduction study and surface anatomy for needle electromyography*. Lippincott Williams & Wilkins.
18. Stokes, E. K. (2011). *Rehabilitation outcome measures* (pp. 27-32). Edinburgh: Churchill Livingstone.
19. Shumway-Cook, A., & Wollacott, M. (2016). *Motor control: translating research to practice*.
20. McKinnis, L. N. (2013). *Fundamentals of musculoskeletal imaging*. FA Davis.
21. Hillegass, E. (2016). *Essentials of cardiopulmonary physical therapy*. Elsevier Health Sciences.
22. Fettes, L., & Tilson, J. (2018). *Evidence based physical therapy*. FA Davis.
23. Goodman, C. C., & Fuller, K. S. (2014). *Pathology: implications for the physical therapist*. Elsevier Health Sciences.
24. Cifu, D. X. (2015). *Braddom's physical medicine and rehabilitation*. Elsevier Health Sciences.
25. Kenney, W. L., Wilmore, J. H., & Costill, D. L. (2018). *Physiology of sport and exercise*. Human kinetics.
26. Park, J. W., & Jung, D. I. (Eds.). (2016). *Integumentary Physical Therapy*. Springer.
27. Sandrini, G., Homberg, V., Saltuari, L., Smania, N., & Pedrocchi, A. (Eds.). (2018). *Advanced Technologies for the Rehabilitation of Gait and Balance Disorders* (Vol. 19). Springer.
28. Hillegass, E. (2016). *Essentials of cardiopulmonary physical therapy*. Elsevier Health Sciences.
29. Nair, K. P. S., González-Fernández, M., & Panicker, J. N. (Eds.). (2018). *Neurorehabilitation Therapy and Therapeutics*. Cambridge University Press.
30. Brukner, P. (2017). *Brukner & Khan's Clinical Sports Medicine*. McGraw-Hill Education.
31. Herzog, W. (Ed.). (2000). *Clinical biomechanics of spinal manipulation*. Churchill Livingstone

32. SandyFritz,KathleenPaholskyandM.JanesGrosenbach-BasicSciencefor softtissueandmovementtherapies.
33. Saunders, R., Astifidis, R., Burke, S. L., Higgins, J., & McClinton, M. A. (2015). Hand and upper extremity rehabilitation-e-book: a practical guide. Elsevier Health Sciences.
34. Jean M Irion, Glenn L Irion.Women's Health in Physical Therapy: Principle and Practices for Rehab Professionals (Point (Lippincott Williams & Wilkins)) 1st Edition
35. 35. Swami Satyananda Saraswati, asana Pranayama mudra bandha, Yoga Publications Trust, Ganga Darshan, Munger, Bihar, India. Fourth (revised) edition, 2008
36. Malhotra, A. K. (2017). An Introduction to Yoga Philosophy: an annotated translation of the Yoga Sutras. Routledge
37. Brukner, P. (2017). Brukner & Khan's Clinical Sports Medicine. McGraw-Hill Education.
38. Goodman, C. C., & Snyder, T. E. K. (2000). Differential diagnosis in physical therapy. Philadelphia, PA: Saunders.
39. Poduri, K. R. (2017). Geriatric Rehabilitation: From Bedside to Curbside. CRC Press.
40. Long, T. (2018). Handbook of pediatric physical therapy. Lippincott Williams & Wilkins.
41. Tecklin, J. S. (Ed.). (2008). Pediatric physical therapy. Lippincott Williams & Wilkins.
42. Stokes, M., & Stack, E. (Eds.). (2011). Physical Management for Neurological Conditions E-Book:[Formerly Physical Management in Neurological Rehabilitation E-Book]. Elsevier Health Sciences.
43. Martin, S. T., & Kessler, M. (2015). Neurologic interventions for physical therapy. Elsevier Health Sciences.
44. Shamus, E., Stern, D. F., & Stern, D. F. (2011). Effective documentation for physical therapy professionals. McGraw-Hill Medical.
45. Jacobs, K. (Ed.). (2008). Ergonomics for therapists. Elsevier Health sciences.

BRANCH: MASTER OF PHYSIOTHERAPY IN MUSCULOSKELETAL DISORDERS AND SPORTS

TITLE OF THE PAPER III : CLINICAL, PHYSICAL AND FUNCTIONAL DIAGNOSIS IN MUSCULOSKELETAL DISORDERS AND SPORTS PHYSIOTHERAPY

Duration : 0 - 12 months Teaching Scheme Theory : 150 Hours Practical : 200 Hours

LEARNING OBJECTIVES

1. Able to execute all routine physiotherapeutic assessment and outcomes with evidence based practice in orthopaedic, manual therapy, musculoskeletal disorders and sports.
2. Able to practice and assess patient independently.
3. Be able to impart knowledge and train the undergraduates.

Course Description - Theory

Sl No	Content	Hours
1	Physiotherapy evaluation, assessment and special tests of various orthopaedic conditions.	10
2	Differential diagnosis in musculoskeletal conditions.	10
3	Evaluation, assessment and Diagnosis of sports injuries	10
4	Evaluation and assessment of Pain	03
5	Assessment, reasoning in psychosocial factors in musculoskeletal practice	02
6	Neurodynamic assessment, diagnosis and neurodynamic tests	03
7	Clinical electrophysiological testing	06
8	Functional assessment (Hand function, Gait, Posture, A.D.L, Occupational work)	05
9	Outcome measures used in Orthopaedic, Musculoskeletal disorders and Sports physiotherapy.	05
10	Biomechanical and Pathomechanical assessment of peripheral and spinal joints.	04
11	Principles of pathological investigations and Diagnostic imaging techniques with interpretation.	05
12	Clinical assessment and diagnosis of soft tissue disorders.	05
13	Manual therapy – assessment and diagnosis of joint and soft tissue dysfunction.	06
14	Assessment, Clinical examination of movement dysfunction and Muscle imbalances.	02
15	Assessment and diagnosis of Developmental bone disorders.	02

16	Exercise testing	03
17	Anthropometric measurements.	03
18	Physical fitness assessment by a. Range of motion b. Muscle strength, endurance, flexibility and skills. c. Agility, balance and coordination tests. d. Body composition e. Cardiac efficiency tests, exercise ECG testing, pulmonary function tests and spirometry f. Fitness test for sports g. Evaluation of aging h. Fitness testing for special population-Paediatrics, women, geriatrics	15
19	Evaluation of different types of fatigue	02
20	Gait analysis and diagnosis.	04
21	Pain assessment and Psychosocial effects and illness behaviour of chronic pain.	02
22	Aids and appliances, adaptive functional devices.	03
23	Evaluation & Checkouts of orthotics and prosthetics for neuromusculoskeletal problems.	04
24	Physical disability evaluation and disability diagnosis	03
25	Methods of Kinetic and kinematic investigation for joints and gait.	05
26	Assessment, evaluation of Paediatric conditions and related musculoskeletal surgeries.	05
27	Physiotherapeutic assessment of Metabolic and Endocrine disorders	05
28	Physiotherapeutic assessment of Arthroplasty	10
29	Assessment , Evaluation of Balance and Proprioception	04
30	Clinical signs and symptoms, physical and functional evaluation of musculoskeletal related cancer	04

BRANCH: MASTER OF PHYSIOTHERAPY IN MUSCULOSKELETAL DISORDERS AND SPORTS

TITLE OF THE PAPER IV: PHYSIOTHERAPY IN MUSCULOSKELETAL DISORDERS AND SPORTS

Duration : 13 - 24 months Teaching Scheme Theory : 150 Hours Practical : 250 Hours

LEARNING OBJECTIVES

1. Able to perform independent physiotherapy assessment and treatment for patients.
2. Able to execute all routine physiotherapeutic procedures with evidence-based practice in musculoskeletal sciences and sports
3. Able to provide adequate knowledge about the treatment procedures and benefit.
4. Able to practice and assess patient independently.
5. Provide students with detailed physiotherapy training in orthopaedic, manual therapy, musculoskeletal sciences, and sports
6. Acquire the knowledge and skill of various approaches of Manual therapy, neural mobilization, soft tissue techniques, and patient education.
7. Be able to impart knowledge and train the undergraduates.

Course Description - Theory

Sl No	Content	Hours
1	Anatomical, Physiological and Biomechanical basis for evaluation of movement dysfunctions.	02
2	Clinical reasoning, Clinical decision making skills in evaluation & management in orthopaedic physiotherapy.	02
3	Advances in functional diagnostic procedures & various outcome measures relevant to neuromusculoskeletal dysfunctions.	02
4	Physiotherapy management of degenerative joint disorders, inflammatory conditions, soft tissue pathologies, rheumatological conditions, and musculoskeletal conditions,	10
5	Physiotherapy management of locomotor disorder, principles of medical and surgical aspects, and retraining.	02
6	Assessment, clinical reasoning and management of Integumentary impairments due to musculoskeletal dysfunction	02
7	Pain science Approaches in physiotherapy a. Definitions of pain, Types of pain, Identification of risk factors for chronicity, current models for the clinical engagement of pain,	

	<ul style="list-style-type: none"> b. Biomedical and Biopsychosocial model , Fear avoidance model, Pain catastrophizing c. Pain mechanisms and contributors, theory of modulation of pain, and integration of the pain sciences into clinical reasoning models d. Pain measurement tools/scales, Pain Self-efficacy e. e. Motor control: Peripheral and spinal pain f. Pain management strategies in physiotherapy , Multidisciplinary pain management approaches, Therapeutic Neuroscience Education, Cognitive behavioural therapy g. Biopsychosocial approaches into physiotherapy management. 	10
8	Influence of stress, coping and social factors on pain and disability in musculoskeletal practice	05
9	Physiotherapy management of Fibromyalgia, Complex regional pain syndrome, myofascial pain, degloving injuries, Burns, Cumulative Traumatic Disorders, brachial plexus and nerve injury.	05
10	Orthopaedic implants - designs, materials indications, post - operative physiotherapy.	05
11	Aids and appliances, adaptive functional devices to improve neuromusculoskeletal dysfunctions.	04
12	Physiotherapy management of locomotor impairments, and disabilities at institutional & community levels.	04
13	Physiotherapy management in Fractures, Joint dislocations and Instabilities, , Soft Tissue Disorders, Deformities, Metabolic, Hormonal Conditions, Neoplastic, Infective Conditions Of Bones and Joints .	06
14	Pre and Post-surgical Rehabilitation of Joint replacement surgeries.	04
15	Physiotherapy management in tendon transfer	04
16	Physiotherapeutic modalities and therapeutic biofeedback in musculoskeletal disorders	03
17	Rehabilitation of Spinal cord injuries.	02
18	Rehabilitation of congenital conditions and malformation of musculoskeletal disorders.	02
19	Physiotherapy management in Amputation and Prosthetic Prescription.	02
20	Physiotherapy management in wound and oedema	02

21	Equipments in orthopaedic physiotherapy: Isokinetic, EMG and Biofeedback, Proprioception assessment equipments, Gait analyzers.	04
22	Home and self-help programme in orthopaedic physiotherapy.	02
23	Disability prevention and management.	02
24	Exercise planning and Exercise Prescription	02
25	Hand Rehabilitation	02
26	Sports injuries and their management.	05
27	Principles of Injury Prevention and training of athletes of different disciplines.	02
28	Protective & supportive equipments in sports rehabilitation	02
29	Medico legal issues in sports, Sports Psychology, Sports Nutrition, Sports diet and Sports pharmacology.	02
30	Performance enhancing drugs, doping	02
31	Therapeutic exercises - Strength training, power training, Flexibility training, endurance training, Plyometrics, Reaction training, Proprioceptive training, Stretching, Sports specific training. & Cross training	05
32	Introduction & Basic concepts of Manual therapy	02
33	Principles of Manual Therapy- principles of subjective examination and physical examination ,treatment ,re-assessment of spinal and peripheral joint problems	05
34	Communication, Documentation, Clinical Reasoning, Evidence based practice & Medico-legal issues in manual therapy.	02
35	General schools of thought of Manual Therapy - principles & philosophies.	02
36	Manual therapy - Indications, contraindications, and methods of application of joint mobilization techniques and soft tissue manipulations.	02
37	Neurodynamics and neural tissue mobilization.	03
38	Osteopathic and Chiropractic school of thoughts	01
39	Mulligan--principles of assessment and treatment using mulligan concept a. NAGS ,SNAGS ,RNAGS ,MWM, application in spinal and peripheral joint dysfunction	05
40	Maitland-Principles and application in spinal and peripheral joint dysfunction	02

41	Kaltenborn - Principles and application in spinal and peripheral joint dysfunction	02
42	Cyriax - history ,physical examination-selective tissue tension test, management strategies in spinal and peripheral joint and soft tissue techniques - deep transverse friction massage ,massage ,manipulation , injection	02
43	McKenzie-- classification of spinal pain as adopted by McKenzie-postural, dysfunction and derangement -assessment and treatment procedures	02
44	Pilates school of thought and techniques.	02
45	Mennel's technique	01
46	Myofascial Release technique-fibromyalgia, trigger point therapy principles of assessment and treatment	02
47	Positional release technique--assessment and treatment procedures strain and counter strain technique - Functional technique	02
48	Muscle Energy Technique--theories of spinal and peripheral joint dysfunction - fryette's laws of physiological spinal motion - segmental vertebral dysfunction - Neutral Rotation and Side Flexion (NRS), Flexion Rotation & side flexion (ERS), Flexion Rotation &side flexion (FRS) - screening examination, scanning examination, skill rolling, segmental definition (diagnosis), treatment using MET	02
59	Taping techniques in orthopaedic conditions and sports.	02
50	Combined Movements of spine	01

BRANCH: MASTER OF PHYSIOTHERAPY IN MUSCULOSKELETAL DISORDERS AND SPORTS

TITLE OF THE PAPER V : RECENT ADVANCES AND EVIDENCE BASED PRACTICE IN MUSCULOSKELETAL DISORDERS AND SPORTS PHYSIOTHERAPY

Duration: 13 - 24 months Teaching Scheme Theory: 150 Hours Practical: 200 Hours

LEARNING OBJECTIVES

1. Employ critical thinking, self-reflection, and evidence-based practice to make clinical decisions about physical therapy services
2. Collect and critically evaluate data and published literature to apply in the delivery of care, practice management, and to examine the theoretical and scientific basis for Musculoskeletal disorders and Sports physiotherapy.

Course Description - Theory

Sl No	Content	Hours
1	EBP and Clinical guidelines for musculoskeletal conditions	10
2	Recent advances & controversies in manual therapy and grey areas of research.	02
3	EBP and recent advances in Orthopaedic Physical Examination Tests	05
4	EBP and Recent advances in clinical assessment, laboratory investigations and diagnosis of musculoskeletal disorders	06
5	EBP in assessment and management of pain in musculoskeletal disorders	06
6	Recent Advances in management of orthopaedic conditions (Medical and Surgical)	10
7	Recent Advances in Manual Therapy management for spinal disorders	05
8	Recent Advances in Manual Therapy management in arthritis and allied conditions	05
9	Recent Advances and Controversies in Electrotherapy	02
10	Recent advances in Kinematic & kinetic analysis	02
11	Current trends and EBP in Taping techniques	02
12	EBP and Current trends in sports injuries and management.	05
13	Evidence Based physiotherapy in management of metabolic and hormonal, neoplastic and infective conditions of bones and joints	02
14	Recent Advances in Physiotherapy following arthroplasty, implants and soft tissue repairs	02

15	EBP and recent advances in physiotherapy after tendon transfer, Electrical stimulation and biofeedback procedures.	05
16	EBP in Rehabilitation of congenital conditions and malformation of musculoskeletal disorders	06
17	Recent Advances in External aids, appliances, adaptive self-help devices; prescription, biomechanical compatibility, check- out and training.	05
18	EBP and Recent advances in electro diagnosis, Electromyography, NCV and evoked potential studies.	03
19	Ergonomics assessment and management at work place.	05
20	Recent Advances and Controversies in Manual Therapy.	05
21	Evidence based physiotherapy practice in orthopaedic manual therapy.	06
22	Current trends in orthopaedic implants - designs, materials indications, post - operative physiotherapy	05
23	Current trends in Fractures, joint instabilities, soft tissue disorders, deformities, nerve injuries and physiotherapy	05
24	Recent advances in Amputation - physiotherapy management and prosthetic prescription	05
25	EBP and recent advances in exercise testing and exercise prescription	06
26	EBP and current trends in Therapeutic exercises	06
27	EBP in sports nutrition and diet	06
28	Recent advances in Outcome measures used musculoskeletal disorders.	06
29	Evidenced based practice in functional rehabilitation - return to sports criteria.	06
30	Current trends in management of Integumentary impairments due to musculoskeletal dysfunction	06

Recommended Reading for Master of Physiotherapy in Musculoskeletal disorders and Sports (all 3 specialty papers)

1. Jones, M. A., & Rivett, D. A. (2018). Clinical Reasoning in Musculoskeletal Practice. Elsevier Health Sciences.
2. Adriaan Louw, Emilio Puentedura, Steve Schmidt and Kory Zimney. Pain Neuroscience Education: Teaching People About Pain(2nd edition)
3. David, J., MAGEE, M., & ROBERT, C. (2020). ORTHOPEDIC PHYSICAL ASSESSMENT. Saunders.
4. Mosley, G. L., & Butler, D. S. (2017). Explain pain supercharged. NOI.
5. Moseley, G. L. (2012). The graded motor imagery handbook. Noigroup publications.
6. Cook, C. (2012). Orthopedic Manual Therapy An Evidence-Based Approach
7. Cook, C. (2012) Orthopedic Physical Examination Tests: An Evidence-Based Approach (2nd Edition)
8. O'Sullivan, S. B., Schmitz, T. J., & Fulk, G. (2019). Physical rehabilitation. FA Davis.
9. Magee, D. J., Zachazewski, J. E., Quillen, W. S., & Manske, R. C. (2015). Pathology and intervention in musculoskeletal rehabilitation (Vol. 3). Elsevier Health Sciences.
10. Diane Jacobs, (2016)Dermo Neuro Modulating: Manual Treatment for Peripheral Nerves and Especially Cutaneous Nerves
11. Todd Hargrove,(2014),A Guide to Better Movement: The Science and Practice of Moving with More Skill and Less Pain.
12. Gifford, L. (2014). Aches and pains. CNS Press (three-book set)
13. Kisner, C., Colby, L. A., & Borstad, J. (2017). Therapeutic exercise: Foundations and techniques. Fa Davis.
14. Goodman, C. C., Heick, J., & Lazaro, R. T. (2017). Differential Diagnosis for Physical Therapists-E-Book: Screening for Referral. Elsevier Health Sciences.
15. Neumann, D. A. (2013). Kinesiology of the musculoskeletal system-e-book: foundations for rehabilitation. Elsevier Health Sciences.
16. American College of Sports Medicine, Riebe, D., Ehrman, J. K., Liguori, G., & Magal, M. (2018). ACSM's guidelines for exercise testing and prescription. Wolters Kluwer.
17. Loudon, J. K., Manske, R. C., & Reiman, M. P. (2018). Clinical mechanics and kinesiology. Human Kinetics.
18. Martin, S. T., & Kessler, M. (2015). Neurologic interventions for physical therapy. Elsevier Health Sciences.

19. Cameron, M. H. (2017). *Physical Agents in Rehabilitation-E Book: An Evidence-Based Approach to Practice*. Elsevier Health Sciences.
20. Hing, W., Hall, T., Rivett, D. A., Vicenzino, B., & Mulligan, B. (2015). *The mulligan concept of manual therapy: textbook of techniques*. Elsevier Health Sciences.
21. Edmond, S. L. (2016). *Joint Mobilization/Manipulation-E-Book: Extremity and Spinal Techniques*. Elsevier Health Sciences.
22. J H Cyriax MD MRCP and P J Cyriax MCSP (1993) *Cyriax's Illustrated Manual of Orthopaedic Medicine* Butterworth-Heinemann Ltd, Oxford (2nd edition), 1993
23. Avers, D., & Brown, M. (2018). *Daniels and Worthingham's Muscle Testing: Techniques of Manual Examination and Performance Testing*. Elsevier Health Sciences.
24. Manske, R. C. (2015). *Fundamental orthopedic management for the physical therapist assistant*. Elsevier Health Sciences.
25. Shumway-Cook, A., & Wollacott, M. (2016). *Motor control: translating research to practice*.
26. McKinnis, L. N. (2013). *Fundamentals of musculoskeletal imaging*. FA Davis.
27. Hillegass, E. (2016). *Essentials of cardiopulmonary physical therapy*. Elsevier Health Sciences.
28. Feters, L., & Tilson, J. (2018). *Evidence based physical therapy*. FA Davis.
29. Goodman, C. C., & Fuller, K. S. (2014). *Pathology: implications for the physical therapist*. Elsevier Health Sciences.
30. Cifu, D. X. (2015). *Braddom's physical medicine and rehabilitation*. Elsevier Health Sciences.
31. Twomey, L. T. (2004). *Grieve's modern manual therapy*.
32. Lee, D. G. (2011). *The Pelvic Girdle E-Book: An integration of clinical expertise and research*. Elsevier Health Sciences.
33. Stokes, E. K. (2011). *Rehabilitation outcome measures* (pp. 27-32). Edinburgh: Churchill Livingstone.
34. Brukner, P. (2017). *Brukner & Khan's Clinical Sports Medicine*. McGraw-Hill Education.
35. Herzog, W. (Ed.). (2000). *Clinical biomechanics of spinal manipulation*. Churchill Livingstone
36. SandyFritz, KathleenPaholskyandM.Janes Grosenbach - *Basic Science for soft tissue and movement therapies*.
37. Manheim, C. J. (2008). *The myofascial release manual*. Slack Incorporated

38. Hengeveld, E., & Banks, K. (Eds.). (2013). *Maitland's vertebral manipulation: management of neuromusculoskeletal disorders* (Vol. 1). Elsevier Health Sciences.
39. Maitland, G. D. (2013). *Vertebral manipulation*. Butterworth-Heinemann.
40. Maitland, G., Hengeveld, E., Banks, K., & English, K. (2005). *Maitland's Peripheral Manipulation*.
41. McKenzie, R. (1990). *The cervical and thoracic spine: mechanical diagnosis and therapy*. Orthopedic Physical Therapy.
42. McKenzie, R., & May, S. (2003). *The lumbar spine: mechanical diagnosis and therapy* (Vol. 1). Orthopedic Physical Therapy.
43. Lyn Paul Taylor (1990) *Taylor's manual of physical evaluation and treatment*
44. Deig, D. (2001). *Positional release technique: from a dynamic systems perspective*. Butterworth-Heinemann.
45. Chaitow, L., & Crenshaw, K. (2006). *Muscle energy techniques*. Elsevier Health Sciences.
46. Reid, D. C. (1993). *Sports injury, assessment and rehabilitation*. *Medicine & Science in Sports & Exercise*, 25(10), i
47. Hoppenfeld, S., & Murthy, V. L. (Eds.). (2000). *Treatment and rehabilitation of fractures*. Lippincott Williams & Wilkins.
48. Norris, C. M. (2004). *Sports injuries: Diagnosis and management*. Butterworth-Heinemann
49. Christopher M.. Norris. (1993). *Sports injuries: Diagnosis and management for physiotherapists*. Butterworth-Heinemann
50. McGinnis, P. M. (2013). *Biomechanics of sport and exercise*. Human Kinetics.
51. Kandel, E. R., Schwartz, J. H., & Jessell, T. M. (2000). *Principles of neural science* 1. (4th ed.). USA: McGraw-Hill.
52. Greenman, P. E. (2003). *Principles of manual medicine* (3rd ed.). Philadelphia: Lippincott Williams & Wilkins.
53. Wilson, A. (2002). *Effective management of musculoskeletal injury: A clinical ergonomics approach to prevention*. Churchill Livingstone.
54. Ebnezar, J. (2003). *Essentials of orthopaedics for physiotherapist*. JAYPEE BROTHERS PUBLISHERS.
55. Nordin, M., & Frankel, V. H. (Eds.). (2001). *Basic biomechanics of the musculoskeletal system*. Lippincott Williams & Wilkins.
56. Bulstrode, C., Buckwalter, J., Carr, A., Marsh, L., Fairbank, J., Wilson-Macdonald, J., & Bowden, G. (2002). *Oxford Textbook of Orthopedics and Trauma Volume Two*. Oxford University Press.

57. Day, R. J., & Fox, J. E. (2009). A physiotherapist's guide to clinical measurement.
58. Azar, F. M., Canale, S. T., & Beaty, J. H. (2016). Campbell's operative orthopaedics e-book. Elsevier Health Sciences.
59. Swain, J., Bush, K. W., & Brosing, J. (2008). Diagnostic Imaging for Physical Therapists-E-Book. Elsevier Health Sciences
60. Chaitow, L., & DeLany, J. (2011). Clinical Application of Neuromuscular Techniques, Volume 2 E-Book: The Lower Body. Elsevier Health Sciences.
61. Delany, J., & Chaitow, L. (2000). Clinical Applications of Neuromuscular Technique.
62. Gibbons, J. (2011). Muscle energy techniques: A practical guide for physical therapists. Lotus Publishing.
63. Hammer, Warren I., ed. Functional soft-tissue examination and treatment by manual methods. Jones & Bartlett Learning, 2007.
64. Gibbons, P., & Tehan, P. (2016). Manipulation of the Spine, Thorax and Pelvis: with access to [www. spinethoraxpelvis. com](http://www.spinethoraxpelvis.com). Elsevier Health Sciences.
65. Park, J. W., & Jung, D. I. (Eds.). (2016). Integumentary Physical Therapy. Springer.
66. Kenney, W. L., Wilmore, J. H., & Costill, D. L. (2018). Physiology of sport and exercise. Human kinetics.
67. Kimura, J. (2001). Electrodiagnosis in diseases of nerve and muscle: principles and practice. Oxford university press.
68. Lee, H. J., & DeLisa, J. A. (2005). Manual of nerve conduction study and surface anatomy for needle electromyography. Lippincott Williams & Wilkins.
69. Sandrini, G., Homberg, V., Saltuari, L., Smania, N., & Pedrocchi, A. (Eds.). (2018). Advanced Technologies for the Rehabilitation of Gait and Balance Disorders (Vol. 19). Springer.
70. Saunders, R., Astifidis, R., Burke, S. L., Higgins, J., & McClinton, M. A. (2015). Hand and upper extremity rehabilitation-e-book: a practical guide. Elsevier Health Sciences.

Recommended journals:

- 1 Physiotherapy: Theory and Practice
- 2 PAIN
- 3 Musculoskeletal Science and Practice
- 4 Neurorehabilitation and neural repair
- 5 Journal of orthopaedic and sports physical therapy
- 6 Journal of head trauma rehabilitation
- 7 Manual therapy
- 8 Archives of physical medicine and rehabilitation
- 9 Supportive care in cancer
- 10 Physical therapy
- 11 Journal of electromyography and kinesiology
- 12 Journal of rehabilitation medicine
- 13 Clinical rehabilitation
- 14 Australian journal of physiotherapy
- 15 American journal of physical medicine & rehabilitation
- 16 Disability and rehabilitation
- 17 Brain injury
- 18 Journal of rehabilitation research and development
- 19 Topics in stroke rehabilitation
- 20 European journal of cancer care
- 21 Journal of manipulative and physiological therapeutics
- 22 Developmental neurorehabilitation
- 23 Physiotherapy
- 24 Physical therapy in sport
- 25 Journal of hand therapy
- 26 Prosthetics and orthotics international
- 27 Journal of sport rehabilitation
- 28 Disability and rehabilitation
- 29 European journal of physical and rehabilitation medicine
- 30 Journal of musculoskeletal pain
- 31 Journal of physical therapy science
- 32 Journal of back and musculoskeletal rehabilitation
- 33 Journal of neurologic physical therapy
- 34 Physical Medicine and Rehabilitation PM&R
- 35 Journal of Bodywork and Movement Therapies
- 36 Journal of Advanced Research
- 37 Burns Open
- 38 Brazilian Journal of Physical Therapy

- 39 Chiropractic & Manual Therapies
- 40 The Journal of Pain
- 41 Strength & Conditioning
- 42 Neuro Rehabilitation
- 43 Spine
- 44 Gait & Posture
- 45 Journal of Rehabilitation Research and Development
- 46 Clinical Medicine Insights. Therapeutics
- 47 Strategies in trauma and limb reconstruction.
- 48 Pain and Therapy
- 49 Journal of Contemporary Athletics
- 50 New Zealand Journal of Physiotherapy
- 51 BMC Musculoskeletal Disorders
- 52 Physiotherapy and Occupational Therapy Journal
- 53 Indian Journal of Orthopedics
- 54 Journal of Foot and Ankle Research
- 55 Journal of Cardiopulmonary Rehabilitation and Prevention

BRANCH: MASTER OF PHYSIOTHERAPY IN NEUROLOGICAL AND PSYCHOSOMATIC DISORDERS		
TITLE OF PAPER III: CLINICAL, PHYSICAL AND FUNCTIONAL DIAGNOSIS IN NEUROLOGICAL AND PSYCHOSOMATIC DISORDERS		
Duration: 0- 12 months Teaching Scheme Theory: 150 Hours Practical: 200 Hours		
LEARNING OBJECTIVES:		
1. To be able to assess and diagnose clinically relevant findings on the patient to plan the rehabilitation program 2. Document patients' evaluator findings using outcome measures/ scales and assess the progression.		
Course Description - Theory		
Sl. No.	Content	Hours
1	Overview of Neuro-anatomy and Neurophysiology including Peripheral, Central and Autonomic Nervous systems, Special senses.	05
2	Neurophysiology of balance, co-ordination, posture and locomotion	08
3	Normal developmental sequence, neonatal and developmental screening/ assessment tools	08
4	Neurophysiological basis for Reflex maturation	04
5	Concepts and theories of motor control and motor learning	05
6	Neurological evaluation - History, Higher Mental Functions, Cranial nerve examination, Sensory/ Motor evaluation including tone, voluntary control Co- ordination and balance, Gait, Functional evaluation	08
7	Neuropsychological evaluation- (Cognitive and Perceptual functions) Memory, Intelligence, Attention, language, Executive function, Visio- spatial	05
8	Clinical examination and detection of movement dysfunction	05
9	Outcome measures, scales and prognostic tools used in various neurological conditions	06
10	Gait analysis -kinematic and kinetic components	06
11	Musculoskeletal concepts and its application in neurological rehabilitation- Neural Tissue tension tests	08
12	Orthotics, Splinting, wheelchair prescription and training, assistive/ functional devices in neurological rehabilitation	06
13	Special Diagnostic/ Investigative procedure- Blood, CSF examination, biopsy, Electroencephalogram (EEG)	06

14	Imaging techniques in neurological conditions- Computed Tomography (CT), Magnetic Resonance Imaging (MRI), Myelogram, Radiography, Doppler studies	10
15	Basics of electrophysiology- Properties of nerve and muscle, NMJ and generation and propagation of action potential	04
16	Basics of electrodiagnosis- Historical background, methods and goals of electrodiagnosis, Instrumentation	02
17	Electrical stimulation tests- Principles for use in normal and denervated, SD Curve and FG tests, Chronaxie and Rheobase, Interpretation	04
18	Electromyography (EMG)- Definition, Instrumentation, Techniques/ Procedure and analysis of various waveforms. Qualitative and quantitative EMG	05
19	Nerve Conduction Studies- Definition, orthodromic and antidromic conduction, Instrumentation, Techniques / Procedure (Sensory and Motor nerve conduction) and Interpretation. Factors affecting NCV studies, Repetitive nerve stimulation (RNS)	06
20	Electrical study of reflexes- Definition, procedure, clinical implication and uses in H- Reflex, F response, Axon reflexes, Blink reflexes, Jaw jerk	06
21	Evoked potentials- Somatosensory evoked potential (SSEP), Motor evoked potential (MEP), Brainstem evoked potential, Visual evoked Potential (VEP)	06
22	Evaluation of Autonomic nervous system dysfunction with reference to psychophysiological testing	03
23	Assessment and management of Neurogenic bladder	02
24	Biofeedback- Definition, Principles, Types, Instrumentation, Indication and contraindication, and therapeutic uses.	03
25	Anthropometry and Physical disability evaluation	04
26	Exercise evaluation and prescription, ECG, PFT	04
27	Evaluation methods, Special tests used in Musculoskeletal, Cardiopulmonary, Paediatric and Geriatric conditions	07
28	Pain assessment and scales	04

BRANCH: MASTER OF PHYSIOTHERAPY IN NEUROLOGICAL AND PSYCHOSOMATIC DISORDERS		
TITLE OF THE PAPER IV: PHYSIOTHERAPY IN NEUROLOGICAL AND PSYCHOSOMATIC DISORDERS		
Duration: 13-24 months Teaching Scheme: Theory: 150 Hours Practical: 250 Hours		
LEARNING OBJECTIVES		
<ol style="list-style-type: none"> 1. Apply knowledge learnt in basic sciences, neurology and neurosurgery to develop clinical reasoning skills and design therapeutic interventions in neurological disorders 2. To be able to identify therapeutic needs and set specific, measurable, attainable, relevant and time bound (SMART) goals. 3. To adopt interdisciplinary approach and referrals in the plan of care. 		
Course Description - Theory		
Sl. No	Content	Hours
1	Cerebrovascular accident- types and pathophysiology, vascular syndromes, investigations, medical management, physiotherapy and rehabilitation	06
2	Degenerative neurological disorders including - Classification, medical management and physiotherapy intervention	08
3	Movement dysfunction associated with Cerebellar damage- Pathophysiology, Clinical presentation, physiotherapy management	04
4	Movement dysfunction associated with Basal Ganglia disorders- Pathophysiology, Clinical presentation, physiotherapy management	05
5	Infectious and inflammatory disorders of the nervous system- Meningitis, Encephalitis, Guillian Barre Syndrome, Poliomyelitis, HIV.	07
6	Physiotherapy management for Neoplasms in the CNS- Brain tumours and Spinal Cord tumours- Classification, medical / surgical intervention, rehabilitation.	05
7	Multiple sclerosis and other demyelinating disorders of CNS- Physiotherapy management	04
8	Physiotherapy intervention post traumatic CNS conditions- Traumatic brain injury (TBI), Traumatic Spinal cord Injury (SCI)- Acute care, rehabilitation, community reintegration	08
9	Diseases of spinal cord- Syringomyelia, Radiculopathy, Transverse myelitis	06

10	Compressive myelopathy- Classification, Surgical management, post-operative physiotherapy management	03
11	Physiotherapy management for Peripheral Nerve injuries- Classification, diagnosis and prognosis, medical/ surgical management	06
12	Physiotherapy management for Cranial Nerve injuries	04
13	Medical, surgical and physiotherapy management in disturbances of cerebro-spinal fluid and its circulation.	05
14	Disease of muscles- Muscular dystrophy, Myopathy, Myotonia	07
15	Disorders of the Neuromuscular Junction- Myasthenia Gravis, Eaton Lambert syndrome	04
16	Vestibular disorders and its management- Vestibular system physiology and functions, disorders, tests and clinical evaluation, physiotherapy management.	05
17	Disorders of speech and language- Aphasia, Dysarthria, Dysphonia	03
18	Cognitive and Perceptual disorders- Classification, Remedial or compensatory strategies in physiotherapy intervention	04
19	Physiotherapy intervention for autonomous nervous system dysfunction	02
20	Neuro-physiotherapy management in Intensive care units	06
21	Management of bowel and bladder dysfunction in neurological conditions	02
22	Neuro- physiotherapeutic approaches- NDT, Roods, Brunnstrom, PNF, CIMT, Vojta , Sensory integration, Motor relearning program, and Contemporary task oriented approach.	25
23	Biofeedback - Principles and application in neuro physiotherapy	04
24	Pain theories, mechanism and management	05
25	Gait in neurological conditions- Classification, Assessment and training	05
26	Drug therapy in neurological conditions and its impact on rehabilitation	03
27	Community based rehabilitation methods and community reintegration in various neurological conditions	04

BRANCH: MASTER OF PHYSIOTHERAPY IN NEUROLOGICAL AND PSYCHOSOMATIC DISORDERS		
TITLE OF THE PAPER V: RECENT ADVANCES AND EVIDENCE BASED PRACTICE (EBP) IN NEUROLOGICAL AND PSYCHOSOMATIC DISORDERS		
Duration: 13-24 months Teaching Scheme: Theory: 150 Hours Practical: 200 Hours		
LEARNING OBJECTIVES:		
1. Use recent techniques / approaches to treat and train patients with neurological deficits.		
2. Be able to engage microteaching hours and knowledge sharing sessions to undergraduate students		
3. Apply evidence based practice (EBP) guidelines in Neuro-physiotherapy		
Course Description - Theory		
Sl. No	Content	Hours
1	Neural Plasticity	04
2	Mental Imagery in various neurological conditions	03
3	Mirror therapy in stroke rehabilitation	03
4	Lee Silverman Voice Treatment in Parkinson's disease	02
5	Dual task training in Parkinson's Disease	02
6	Strength training in stroke	05
7	Ocular rehabilitation	04
8	Oromotor rehabilitation	02
9	Evaluation and Exercise prescription in Multiple sclerosis	05
10	Recent trends in Vestibular Rehabilitation	06
11	Therapy trends in Bell's Palsy- Mime therapy, Kabat technique	05
12	Functional Electrical stimulation (FES) and evidences for its application in Neurological conditions	07
13	Use of Virtual Reality (VR) interfaces in Neurological conditions	06
14	Rehabilitation Robotics in stroke rehabilitation	08
15	Body Weight Support Treadmill Training (BWSTT) in neurological conditions- Stroke, Spinal Cord Injury	07
16	Recent trends in Gait assessment in Neurological conditions	06
17	Deep Brain Stimulation	03
18	Recent advances in evaluation and treatment of Balance including Dynamic Posturography	06

19	Recent advances in pain modulation and rehabilitation	06
20	Biofeedback in neurological conditions	05
21	Recent trends in conditioning and training for sports in patients with neurological conditions	08
22	Recent advances in Orthotic prescription and management in Neurological conditions	07
23	Evidence for application of PNF in various Neurological conditions	04
24	Evidence for application of CIMT in Neurological conditions	04
25	Evidences for application of Coma Stimulation in Neurological Rehabilitation	03
26	Evidences and methods in management of movement disorders and ataxia	03
27	Evidence for treatment of perceptual and cognitive disorders	05
28	Recent therapy methods and evidence for PT treatment post Spinal surgeries	06
29	Evidences in physiotherapy management of peripheral nerve injuries	05
30	Evidences in physiotherapy management of myopathies	04
31	Recent trends and evidence for use of assistive devices, ambulatory aids and adaptive functional devices in neurological conditions	06

Recommended Reading for Master of Physiotherapy in Neurological and Psychosomatic Disorders (all 3 specialty papers)

1. Haerer AF. DeJong's The neurological examination. 5th ed. Lippincott-Raven: 1999.
2. Bickerstaff E, Spillane J. Neurological examination in clinical practice. 5th ed; Oxford University press: 1989
3. O'Sullivan SB, Schmitz TJ, Fulk GD: Physical rehabilitation: Assessment and treatment. 5th ed; F. A Davis Philadelphia.
4. Fredericks C, Saladin L. Pathophysiology of the motor systems- Principles and Clinical presentation. 1st ed; F.A Davis, Philadelphia. 1995
5. McMahon S, Koltzenburg M, Tracey I, Turk D. Wall and Melzack's Textbook of pain. 6th ed; Elsevier: 2013
6. Barnes M, Crutchfield C. Reflex and Vestibular aspects of motor control, motor development and motor learning. Stoksville Publishing company. USA.
7. Shumway Cook A, Woollacot M. Motor control: theory and practical applications. Williams and Wilkins: 1995
8. Palisano RJ, Orlin MN, Schrieber J. Campbell's Physical therapy for children. 5th ed; Elsevier: 2017
9. Levitt S. Treatment of cerebral palsy and motor delay. 3rd ed. Blackwell Science. 1995
10. Farber SD. Neuro – rehabilitation, A multisensory approach. W.B. Sanders , Philadelphia:1982
11. Herdman S. Vestibular rehabilitation. 3rd ed; F.A Davis, Philadelphia: 2008
12. Kerb D: Bio- Feedback – A practitioners' guide. Guiford press.
13. Black I: The neural basis of motor control. Churchill, Livingstone , London - 1987
14. Bobath B. Abnormal postural reflex activity caused by Brain Lesions. Aspen publications, Rockville: 1997
15. Egel: Disorders of Voluntary Muscle. Churchill Living stone Edingburgh: 1988.
16. Delwaide J, Young R. Clinical neurophysiology in Spasticity. 1st ed; Elsevier:1985
17. Knot M, Voss: Proprioceptive neuro-muscular facilitation techniques. 2nd ed; Harper and Row, New York: 1972.
18. Adler s, Becker D, Buck M. PNF in practice. 2nd ed; Springer: 2003
19. Laidler, Capman, Hall. Stroke rehabilitation. London: 1994

20. Carr J.H, Shephered R.B: Motor relearning programme for stroke. 2nded; Aspen publication, Rock Ville: 1987.
21. Bobath B. Adult hemiplegia- evaluation and treatment. 3rded; Butterworth-Heinmann London: 1990.
22. Brombley I. Paraplegia and tetraplegia. 4thed; Churchill Livingstone, Edingburgh: 1991.
23. Butler DS. Mobilisation of the nervous system. Churchill Livingstone, New York.
24. Davis PM. Steps to follow. 2nd ed; Springer: 2003
25. Davis PM. Right in the middle. Springer: 2003
26. Davis PM. Starting again. 2nd ed; Springer: 2006
27. Sawner K, LaVigne J. Brunnstrom's Movement therapy in hemiplegia. 2nd ed; Lippincot co. Philadelphia: 1992
28. Carr J, Shepherd R. A motor relearning programme for stroke. 2nd ed; Aspen Publishers: 1999
29. Carr J, Shepherd R. Stroke Rehabilitation Guidelines for Exercise and Training to Optimize Motor Skills. 1st ed. Butterworth Heinemann: 2003
30. Umphred D. A. Neurological rehabilitation. 5th edition; Mosby: 2001
31. Latash M, Lestienne F. Motor control and learning. Springer: 2006
32. Measurement in Physical therapy. Churchill, Livingstone, London: 1988.
33. Stokes M. Physical management neurological rehabilitation. 2nded; Elsevier, Mosby.
34. Delisa J, Gans B: Rehabilitation medicine principles and practice. 3rd ed; Philadelphia, New York:1998
35. Harvey L, Donovan W. Management of Spinal cord injuries. Butterworth Heinemann, Elsevier: 2008
36. Freeman Somers M. Spinal cord injury functional rehabilitation: 1992.
37. Gunzbnng R, Szpalski M: Whiplash Injuries, current concepts in prevention diagnosis and treatment, Lippincot Williams & Wilkins.
38. Krusen's: Hand book of physical rehabilitation 4thed; Kottke, Lehman Saunder's.
39. Ropper A, Brown R. Adam and Victor's principle of neurology. 8thed; Mcgraw -Hill companies USA 2005.
40. Snell R.S. Clinical Neuroanatomy for medical students. 5th ed; Lippincott Williams & Wilkins: 2001
41. Carpenter M.B: Human Neuroanatomy. 9th ed; Williams & Wilkins, Baltimore: 1983,
42. Bannister R. Brain and Bannisters Clinical neurology. 7th ed; Oxford medical publications: 2004

43. Lindsay K W, Bone I, Fuller. Neurology & Neurosurgery illustrated, 5th ed; Churchill Livingstone
44. Patten J. Neurological differential diagnosis. 2nd ed; Springer. 2009
45. Suarez JI. Critical Care Neurology and Neurosurgery. 1st ed. Humana Press Publications, USA
46. Asbury, Mckann, Mcdonald. Diseases of Nervous System- Vol .I & Vol II. 3rd ed; Mcarthur public.
47. Kimura J. Electrodiagnosis in diseases of nerve and muscle. 2nd ed; F.A Davis, Philadelphia
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49. Misra U.K, Kalita J: Clinical Neurophysiology NCV, EMG, Evoked Potentials. 5th ed; Elsevier, New Delhi: 2005.
50. Robinson A, Snyder- Mackler L. Clinical Electrophysiology- Electrotherapy and electrophysiological testing. 2nd ed; Lippincott Williams & Wilkins:1994
51. Preston DC, Shapiro BE. Electromyography and Neuromuscular disorders. 2nd ed; Elsevier: 2005
52. Trombly CA. Occupational Therapy for physical dysfunction. 3rd ed; Williams and Wilkins: 1989
53. Pendleton HM, Shultz- Krohn W. Pedritti's occupational therapy: Practice skills for physical dysfunction. 7th ed. Elsevier: 2011
54. Flint BealM, Anthony E. Lang, Albert Ludolph. Neurodegenerative Diseases. 1st ed; Cambridge University Publication, USA: 2005.
55. Portney LG, Watkins MP. Foundations of Clinical research- Applications to practice. Appleton & Lange. 1993.
56. Chichester, UK: John Wiley. Domholdt, E. Physical therapy research: Principles and applications. 2nd ed; WB Saunders, Philadelphia, USA: 2000
57. Kuzma, J. W., & Bohnenblust, S. E. Basic statistics for the health sciences. 5th ed; McGraw Hill, Boston: 2004
58. Munro, B. H. Statistical methods for health care research. 3rd ed; Lippincott, Philadelphia 1997.
59. Coakes, S. J., & Steed, L. G. SPSS: Analysis without anguish: Version 11.0 for Windows; Milton, Australia. John Wiley & Sons Inc: 2003
60. Jenkins, S., Price CJ, & Straker L. The researching therapist. A practical guide to planning, performing and communicating research. Edinburgh: Churchill Livingstone: 1998
61. Campbell, M, Machin, D. Medical statistics: A common sense approach. 2nd ed; Chichester, UK: John Wiley.

62. Domholdt, E. Physical therapy research: Principles and applications. 2nd ed; Philadelphia: WB Saunders: 2000
63. Hicks C. Research of Physiotherapists. 5th ed; Churchill Livingstone, Edingburgh:1995
64. Polgar S. Introduction to Research in Health Sciences. Livingstone London: 1988.
65. Currier D.P: Elements of Research Physical Therapy. 3rd ed; Williams & Wilkins. Baltimore: 1990
66. Sproull. Hand Book of Research method. Scarecrow Press: 1998.
67. Gowitzke. Scientific Basis of Human Movement. 3rd ed;Williams and Wilkins,Baltimore
68. Guccione A, Wong R, Avers D. Geriatric Physical therapy. Elsevier/ Mosby-St. Louis: 2012
69. Fraser. Physical Management of Multiple Handicapped. William & Wilkins, Baltimore.
70. Aisen. Orthotics in neurological rehabilitation. Demos Publication, New York: 1992
71. Delisa. Manual of nerve conduction velocity techniques. Raven press, New York: 1982.

Recommended Journals:

1. Physical Therapy (APTA, America)
2. Physiotherapy (CSP, London)
3. Archives Of Physical Medicine & Rehabilitation
4. Clinical Rehabilitation
5. Spine
6. Gait & Posture
7. Disability and Rehabilitation
8. Neuro rehabilitation and Neural repair
9. Neurorehabilitation
10. American Journal of Physical Medicine & Rehabilitation
11. Physiotherapy (Canada)
12. Australian Journal Of Physiotherapy
13. Journal of Indian Association of Physiotherapy
14. Clinical Kinesiology
15. Journal of Biomechanics
16. Pediatric Physical Therapy
17. Journal of Neurologic Physical Therapy
18. Journal of Rehabilitation Research & Development
19. Journal of Neurological Sciences
20. Advances in Physiotherapy

BRANCH: MASTER OF PHYSIOTHERAPY IN CARDIO RESPIRATORY DISORDERS		
TITLE OF THE PAPER III : CLINICAL, PHYSICAL AND FUNCTIONAL DIAGNOSIS IN CARDIO RESPIRATORY DISORDERS		
Duration : 0-12 months Teaching Scheme Theory : 150 Hours Practical : 200 Hours		
LEARNING OBJECTIVES		
<ol style="list-style-type: none"> 1. It is internationally recognised field of Physiotherapy that gives knowledge about the practice in Intensive Care unit and general practice. 2. The subject is designed to give information of cardio-respiratory disorders with its applied anatomy and physiology including mechanics and radiological aspects. 3. Educates the students to acquire adequate information about cardio-vascular and pulmonary physiotherapy in physical functional diagnosis. 4. It integrates and imbues the graduates to evolve and emerge in the practice as a cardio-vascular pulmonary physiotherapist 		
Course Description - Theory		
Sl No	Content	Hours
1	Assessment of neonatal and paediatrics patients – new born, critically ill infants, older infants and child.	08
2	Comprehensive adult and geriatric assessment – age related sensory deficits, cardio-respiratory deficits and diagnostic tests, standard scales and questionnaires used in geriatric assessment	08
3	Nutritional assessment of patients with cardio- respiratory diseases	08
4	Applied Biomechanics: respiration and circulation	10
5	Assessment of vital signs	05
6	Fundamentals of physical examination and assessment with diagnosis in cardiovascular and respiratory physiotherapy	10
7	Fitness assessment	10
8	Application of Diet and fitness in case of PWD (Person with disability) due to cardiovascular and respiratory disease	05
9	Exercise testing and standardization and interpretation in paediatric, adult and geriatric population	10
10	Risk factor stratification, disability evaluation with reference to cardio vascular and pulmonary disorders	10
11	Psychological evaluation with reference to stress and anxiety in cardio- pulmonary disorders, evaluation of stress and anxiety using	10

	various scales and questionnaires	
12	Effects of normal and abnormal response to exercise on various systems with emphasis on cardiovascular and pulmonary systems various formulae and equations with emphasis on its importance in prescribing exercise in various patient population.	10
13	Evaluation and diagnosis of sleep and breathing disorders.	06
14	Assessment and management in organ transplantation.	10
15	Assessment and management of cardio-vascular conditions in aquatic therapy	10
16	Physiotherapeutic assessment and management of patients with cardio-respiratory disorders in psycho-somatic conditions, neurological conditions.	10
17	Investigations and their interpretation and clinical relevance in cardio-pulmonary Physiotherapy	10

BRANCH: MASTER OF PHYSIOTHERAPY IN CARDIO RESPIRATORY DISORDERS		
TITLE OF THE PAPER IV : PHYSIOTHERAPY IN CARDIO RESPIRATORY DISORDERS		
Duration : 13-24 months Teaching Scheme Theory : 150 Hours Practical : 200 Hours		
LEARNING OBJECTIVES		
<ol style="list-style-type: none"> 1. Subject enables the student to build on their knowledge, clinical exposure and experience. 2. Provides expertization in therapeutic approach of certain cardiovascular and pulmonary dysfunction along with efficacy of components of rehabilitation. 3. Benefits the student to gain independency in enabling the individual rehabilitation for various medical and surgical conditions. 4. Facilitates the student to learn certain socio-cultural communication skills by building up a good rapport with the individual. 		
Course Description - Theory		
SI No	Content	Hours
1	Intrauterine development of cardiopulmonary system and difference between the adult and paediatric cardiopulmonary system.	10
2	Evaluation of respiratory dysfunctions, lung function tests - volumetric, analysis of blood gases, X-ray chest.	10
3	Evaluation of cardiac dysfunction. [ECG, exercise ECG testing, Holter monitoring etc., Echo-cardiogram, X-Ray, Imaging techniques etc.]	10
4	Evaluation of peripheral vascular disorders: clinical, blood flow studies, temperature plethysmography. A.N.S dysfunction testing	05
5	Risk factors, preventive measures and pharmacology in cardio respiratory conditions	10
6	Cardio-vascular disorders and physiotherapy management including exercise prescription	10
7	Intensive care unit – Concept and set-up, equipment for advanced methods of resuscitation, monitoring and patient management: artificial airways, ventilators, pulse -oxymetry, medications and its effects on exercise etc.	10
8	Pulmonary disorders and physiotherapy management including exercise prescription	10
9	Physiotherapy management in peripheral vascular disorders	05

10	Oxygen therapy, Aerosols, humidification: - uses and types & management of patients on Mechanical ventilator	05
11	Cardio-pulmonary resuscitation	10
12	Respiratory physiotherapy techniques – Techniques to improve lung volume; techniques to reduce the work of breathing and techniques to clear airways	10
13	Poisoning, Drug overdose, and Drowning	05
14	Physiotherapy management and exercise prescription following general Medical conditions LIKE: CAD, obesity, renal dysfunction, diabetes mellitus, hypertension ETC...	05
15	Physiotherapy modalities used for wound healing.	05
16	Physiotherapy in oncology.	10
17	Stress, Importance of exercise in stress management and various stress coping strategies, relaxation techniques including yogic postures and yogic breathing in various lifestyle disorders and other cardio-vascular and pulmonary conditions.	05
18	Physiotherapy management in organ transplantation.	10
19	CBR aspects of cardio-vascular conditions.	05

BRANCH: MASTER OF PHYSIOTHERAPY IN CARDIO RESPIRATORY DISORDERS		
TITLE OF THE PAPER V : PHYSIOTHERAPY IN RECENT ADVANCES AND EVIDENCE BASED PRACTICE IN CARDIO RESPIRATORY DISORDERS		
Duration : 13-24 months Teaching Scheme Theory : 150 Hours Practical : 200 Hours		
LEARNING OBJECTIVES		
<ol style="list-style-type: none"> 1. Enables the student to pile-up information of recent advances and evidence-based practice in` cardiovascular and pulmonary sciences. 2. The study material that is designed allows the student to acquire clinical reasoning and manual skills in clinical settings. 3. Provides patients assessment, treatment, education for the care-givers, in order to work as a multi-disciplinary team with other health care professionals. 4. Current reliability and validity of cardio-respiratory outcome measures in specific conditions will be implicated and practiced. 		
Course Description - Theory		
Sl No	Content	Hours
1	Clinical reasoning and evidence-based practice in physiotherapeutic evaluation & management of all neonatal, paediatric, adult and geriatric dysfunctions of the respiratory system and thorax in acute care and in rehabilitation.	10
2	Recent advances in Interpretation and application of Investigations related to Respiratory and thoracic dysfunction and its relevance to physiotherapy	10
3	Pulmonary rehabilitation and its recent advances	10
4	Cardiac rehabilitation and its recent advances.	10
5	Ergonomics and energy conservation techniques in Respiratory dysfunction and use of assistive devices to enhance function and performance	10
6	Pain and palliative care in medical and Post-surgical conditions related to cardio- respiratory dysfunctions and advances in its evaluation and management	10
7	Recent advancement in Cardio- pulmonary resuscitation (basic and advanced)	10
8	Recent advances in Bronchial hygiene and airway clearance techniques - Physiological basis and clinical application	10
9	Medical gas therapy including oxygen therapy: physiological basis,	10

	modes of administration, and home delivery care- an evidence-based practice and recent advances including hyperbaric oxygen therapy.	
10	Recent advances and evidence-based practice in cardio-respiratory physiotherapy in special populations like renal conditions, burns, abdominal surgeries, Diabetic mellitus etc.	10
11	Recent advances in management of oncology rehabilitation	10
12	Recent advances in the use of physical agents and PT management in wounds, ulcers, grafts and incisions and vascular disorders	10
13	Evidence based practice of core muscle strengthening, resistance training, endurance training, and other training methods in cardiac and pulmonary rehabilitation	10
14	Role of exercise and quality of life and cardio-pulmonary rehabilitation, health status measurements and recent advances.	10
15	Recent advances in aquatic therapy in treating patients with cardiovascular and pulmonary conditions	10

Recommended Reading for Master of Physiotherapy in Cardio Respiratory Disorders (all 3 specialty papers)

1. Pierce, L. N. (Ed.). (2007). Management of the mechanically ventilated patient. Saunders.
2. Pierce, L. N., & Pierce, L. N. (1995). Guide to mechanical ventilation and intensive respiratory care. WB Saunders.
3. Victor F. Froelicher, Jonathan Myers(2006) Exercise and the Heart.Saunders
4. Pryor, J. A., & Prasad, A. S. (2008). Physiotherapy for respiratory and cardiac problems: adults and paediatrics. Elsevier Health Sciences.
5. Main, E., & Denehy, L. (2016). Cardiorespiratory Physiotherapy: Adults and Paediatrics 5th Edition. Elsevier.
6. Brannon, Frances J,et al. (1997)Cardiopulmonary Rehabilitation: Basic Theory and Application (Contemporary Perspectives in Rehabilitation).3rd Edition
7. M. Gabriel Khan (1993) Cardiac and Pulmonary Management. Lea and Febiger.
8. Bach John R(1996). Pulmonary Rehabilitation : The Obstructive and Paralytic Conditions. Hanley & Belfus, Inc., Philadelphia.
9. Ray White Squires(1998). Exercise Prescription for the High-risk Cardiac Patient. Human Kinetics
10. Igor Singer, Joel Kupersmith.(1993). Clinical Manual of Electrophysiology. Williams & Wilkins

11. Miller, Nancy Houston; Taylor(1995). Lifestyle Management for Patients with Coronary Heart Disease. Human Kinetics
12. Jones, Norman L (1997).Clinical Exercise Testing .W. B. Saunders
13. Mayer Brenna ed, (2002) ECG Interpretation Made Incredibly Easy. Springhouse 2nd Edition
14. Lewis, K. M., & Handal, K. A. (2000). Sensible Analysis of the 12-lead ECG. Cengage Learning.
15. Fuster, V. (2004). Hurst's the heart. McGraw-Hill, Medical Pub. Division.
16. Irwin, S., & Tecklin, J. S. (Eds.). (2004). Cardiopulmonary physical therapy: A guide to practice. Mosby Incorporated.
17. Ellenbogen, K. A., & Wood, M. A. (2008). Cardiac pacing and ICDs. John Wiley & Sons.
18. Taylor, G. J. (2008). 150 Practice ECGs: Interpretation and Review. John Wiley & Sons.
19. Constant, J. (1999). Bedside cardiology. Lippincott Williams & Wilkins.
20. Scott O. Roberts, Robert A. Robergs, Peter Hanson(1997). Clinical Exercise Testing and Prescription: Theory and Application. CRC-Press.
21. John Buckley, Jane Holmes, Gareth Mapp (1999). Exercise on Prescription: Cardiovascular Activity for Health. Butterworth-Heinemann
22. Cynthia Coffin Zadai(1992). Pulmonary Management in Physical Therapy. Churchill Livingstone.
23. John Elliott Hodgkin, Bartolome R. Celli, Gerilynn Long Connors(2000) Pulmonary Rehabilitation: Guidelines to Success. Lippincott Williams & Wilkins.
24. Frownfelter, D., & Dean, E. (2014). Cardiovascular and pulmonary physical therapy: evidence to practice. Elsevier Health Sciences.
25. Bolton, C. F., Chen, R., Wijdicks, E. F., & Zifko, U. A. (2004). Neurology of breathing. Butterworth-Heinemann.
26. Wilkins, R. L., Stoller, J. K., & Scanlan, C. L. (2003). Egan's fundamentals of respiratory care. Mosby.
27. Fredric J. Pashkow, William A. Dafoe, William A Dafoe(1999). Clinical Cardiac Rehabilitation: A Cardiologist's Guide. Williams & Wilkins
28. Hyatt Robert E ; Scanlon Paul D ; Nakamura Masao (2003). Interpretation of Pulmonary Function Tests : A Practical Guide. Lippincott Williams & Wilkins2ndEdition
29. Lumb, A. B. (2016). Nunn's applied respiratory physiology. Elsevier Health Sciences. Lumb, A. B. (2016). Nunn's applied respiratory physiology. Elsevier Health Sciences.

30. Richard S. Fraser (2005). Synopsis of Diseases of the Chest. Elsevier Saunders.
31. Hough, A. (2001). Physiotherapy in respiratory care: an evidence-based approach to respiratory and cardiac management. Nelson Thornes.
32. Libby, P., Bonow, R. O., Mann, D. L., & Zipes, D. P. (2007). Braunwald's Heart Disease: A Textbook of Cardiovascular Medicine, 2-Volume Set. Elsevier Health Sciences.
33. William DeTurk, Lawrence Cahalin (2004) Cardiovascular and Pulmonary Physical Therapy: An Evidence- based Approach, Volume 1. McGraw-Hill
34. Cloutier, M. M. (2018). Respiratory Physiology: Mosby Physiology Series. Elsevier Health Sciences.
35. Hampton, J. (2013). The ECG made easy. Elsevier Health Sciences.
36. Watchie, J. (2009). Cardiovascular and Pulmonary Physical Therapy-E-Book: A Clinical Manual. Elsevier Health Sciences.
37. Rupali (2015). Physiotherapy in Cardio-Thoracic Conditions. peepee publisher Kacmarek, R. M., Stoller, J. K., & Heuer, A. (2016). Egan's Fundamentals of Respiratory Care-E-Book. Elsevier Health Sciences.
38. Karlman Wasserman, (2015) Principles of Exercise Testing and Interpretation: Including Pathophysiology and Clinical Applications. Wolters Kluwer Health.
39. Atul Luthra (2017). ECG Made Easy. Jaypee Brothers
40. Hillegass, E. (2016). Essentials of cardiopulmonary physical therapy. Elsevier Health Sciences.
41. Solomen Subin ; Aaron Pravin (2017)Vascular Rehabilitation, Jaypee Brothers

Recommended Journals

1. Physical Therapy (APTA, America)
2. Physiotherapy (CSP, London)
3. American Journal of Physical Medicine & Rehabilitation
4. Physiotherapy (Canada)
5. Australian Journal Of Physiotherapy
6. Journal of Indian Association of Physiotherapy
7. Clinical Kinesiology
8. Journal of Biomechanics
9. Pediatric Physical Therapy
10. Journal of Rehabilitation Research & Development
11. European journal of physiotherapy.

BRANCH: MASTER OF PHYSIOTHERAPY IN COMMUNITY PHYSIOTHERAPY		
TITLE OF THE PAPER III : CLINICAL, PHYSICAL AND FUNCTIONAL DIAGNOSIS IN COMMUNITY PHYSIOTHERAPY		
Duration : 0-12 months Teaching Scheme Theory : 150 Hours Practical : 200 Hours		
LEARNING OBJECTIVES :		
<ol style="list-style-type: none"> 1 Provide training in health promotion, disease and disability prevention, restorative and rehabilitative physiotherapy. 2 Provide students with detailed training in community physiotherapy theory and practical, including the use of other physiotherapy modalities. 3 Training on integration of western medical information as appropriate, to ensure that graduates are safe and competent in the practice of community physiotherapy universally. 4 Provide students with quality clinical experience in hospitals and complementary health clinics from day one of the program. 5 Provide students with opportunities for research and higher degree in community physiotherapy on the completion of their undergraduate degree. 		
Course Description - Theory		
Sl No	Content	Hours
1	Assessment of various paediatric, musculo-skeletal, OBG, neurological, cardio- respiratory conditions at community	10
2	Outcome measures used in community physical therapy, Clinical decision making in rehabilitation.	15
3	Assessment of posture, movement and gait in elderly.	06
4	Principles & concepts of geriatric assessment.	02
5	Geriatric screening with assessment of falls.	04
6	Functional changes in hearing, vision, speech & sleep with ageing.	08
7	Aids and appliances and adaptive functional devices used in geriatric physiotherapy.	08
8	Evaluation of Cancer Complications like Lymphedema, musculoskeletal, neurological, cardio respiratory.	10
9	Exercise and cancer related fatigue and its evaluation	10
10	Clinical biomechanics and patho-mechanics of spine, female pelvis, posture, movement and gait.	04
11	Ovulation induction, Ovarian function, clinical aspects of ovulation	02
12	Physiological changes during pregnancy	04
13	Anatomical & physiological changes during postpartum period	02

14	Assessment of Urinary bladder dysfunction	02
15	Instrumentation for assessment of Pelvic floor muscles- Perineometer	02
16	Assessment, clinical tests and diagnosis of movement dysfunction and other musculoskeletal dysfunctions during pregnancy and postpartum period	04
17	Principles of fitness for health promotion in community, nutrition and diet. Physical fitness definition and evaluation	04
18	physiological effects of aerobic exercise- clinical reasoning for advocating aerobic exercises as preventive measure in obesity and its related conditions/ in cardiorespiratory conditions/ aging/ deconditioning effect after prolonged bed rest/ Diabetes	04

BRANCH: MASTER OF PHYSIOTHERAPY IN COMMUNITY PHYSIOTHERAPY		
TITLE OF THE PAPER IV: COMMUNITY PHYSIOTHERAPY		
Duration : 13-24 months Teaching Scheme Theory : 150 Hours Practical : 250 Hours		
LEARNING OBJECTIVES		
<ol style="list-style-type: none"> 1. To update the students with recent advances in the professional practice and provide them opportunities to think, reason and practice towards excellent patients care. 2. Acquire the in-depth understanding of the concept of Community Based Rehabilitation, Physiotherapy in community health and Institution Based Rehabilitation. 3. Inculcate the various skills in patient care handling including communication skills, confidence, clinical reasoning, counselling and research. 		
Course Description - Theory		
Sl No	Content	Hours
1	Health and Illness; Levels of Healthcare & Fitness	06
2	Basic Concepts of rehabilitation and foundations of rehabilitation	06
3	Institute based rehabilitation services and multi-disciplinary approach	04
4	Methodology of CBR with reference to National Health Delivery system.	04
5	Role of National Institutes, District Rehabilitation Centre and Primary Health Centre (with appropriate exposure)	04
6	Public awareness to the various disabilities. Communications. Message generation and dissipation	05
7	Persons with disability; Act - 1995 and related Government infrastructure	03
8	Role of Government in CBR, inter-sectoral programs and co-ordination. Implementation of the Act	05
9	Role of Non-Government organizations in CBR	06
10	Scope of community physiotherapy	08
11	Disability detection and early intervention.	04
12	Physical fitness, stress management through yoga and psychosomatic approaches.	04

13	Home exercise programs for various classifications of disabilities	10
14	Physiotherapist as a Master Trainer in CBR.	04
15	Physiotherapy in maternal and child health care	07
16	Evaluation and theories of aging; Assessment of the elderly; Exercise prescription for the elderly; Psychosocial and safety issues in elderly	06
17	Geriatric Rehabilitation.	06
18	Holistic physiotherapy for the aged.	04
19	Occupational Health, Occupational Hazards, Industrial Hygiene, Vulnerable workers group and labour law;	05
20	Industrial therapy, Injury prevention and returning the worker to productivity	08
21	Ergonomics, Principles, Issues related to hand tools, posture, material handling and lifting	04
22	Prevention of work related Injuries and redesigning workspace, Designing auditory and visual displays for workers; Occupational stress; Environmental Pollution - noise, vibration etc.	06
23	Physiotherapy role in industry - preventive, intervention, ergonomic and rehabilitative.	05
24	Women's, Health : Women's reproductive health and health care; Exercise prescription in pre and post- natal stage	06
25	Diagnosis and treatment of musculoskeletal pain and dysfunction during pregnancy and post menopause.	06
26	Clinical signs and symptoms, physical and functional evaluation in all types of cancer	06
27	Treatment of Incontinence and Pelvic floor dysfunction; Special problems related to Women	06
28	Recent Advances in Community Physiotherapy	02

BRANCH: MASTER OF PHYSIOTHERAPY IN COMMUNITY PHYSIOTHERAPY		
TITLE OF THE PAPER V: RECENT ADVANCES AND EVIDENCE BASED PRACTICE IN PHYSIOTHERAPY IN COMMUNITY PHYSIOTHERAPY		
Duration : 13-24 months Teaching Scheme Theory : 150 Hours Practical : 200 Hours		
LEARNING OBJECTIVES		
<ol style="list-style-type: none"> 1. Demonstrate ability to critically appraise recent community physiotherapy related literature from journals & adopt diagnostic & therapeutic procedures based on it. 2. Demonstrate an expertise in evidence-based skill in the management of community physiotherapy specialty. 		
Course Description - Theory		
Sl No	Content	Hours
1	Recent advances in Principles of fitness training for health promotion in community.	05
2	Disability presentation & physiotherapy.	08
3	New concepts in rural physiotherapy incorporated with Primary Health Centers	08
4	Community awareness & participation in preventive aspects & demands on physiotherapy services.	08
5	Recent advances in Vocational management of vocational problems.	06
6	Legislative provisions for welfare of disabled including persons with disability act.	06
7	Utilization of (ICF) International Classification of Functioning, Disability & health in community physiotherapy & rehabilitation.	08
8	Evidence based physiotherapy in CBR	15
9	Evidence based physiotherapy in Aids and appliances.	05
10	Effects of immobilization and its management in geriatric population	10
11	Ethical & legal issues in geriatric physiotherapy.	08
12	Recent advances in oncological physiotherapy	10
13	Institutional & community based rehabilitation for oncological patients.	05

14	Self-treatment, Exercise precaution, management and exercise prescription for home program, Report writing. Conceptual frame work for clinical practice. Requirements for medical opinion or treatment, documentation, prescription, management and advice.	10
15	Sports and physical training in oncological conditions	05
16	Antenatal Pilates and post natal Pilates	05
17	EBP and recent advances of Electrotherapy in OBG Physiotherapy	10
18	Recent advances in instrumentations, theories, Obstetrics and Gynaecology physical therapy techniques	20

Recommended Reading for Master of Physiotherapy in Community Physiotherapy (all 3 specialty papers)

1. Chew, F. (1997). Skeletal radiology: The bare bones (2nd ed.). Baltimore, MD: Williams & Wilkins.
2. Eisenberg, R. L., & Johnson, N. M. (2003). Comprehensive radiographic pathology (3rd ed.). St Louis, MO: Mosby.
3. Hughes, J., & Hughes, M. (1997). Imaging: Picture tests. Edinburgh: Churchill Livingstone.
4. Mace, J. D., & Kowalczyk, N. (1994). Radiographic pathology for technologists (2nd ed.). St Louis, MO: Mosby.
5. Redhead, D. N. (1995). Imaging: Colour guide. Edinburgh: Churchill Livingstone.
6. Yochum, T. R., & Rowe, L. R. (2005). Yochum and Rowe's essentials of skeletal radiology (3rd ed., Vols. 1-2). Baltimore, MD: Lippincott Williams & Wilkins.
7. Gunn, C. (1997). Bones and joints: A guide for students. London: Churchill Livingstone.
8. Haines, D. E. (2002). Fundamental neuroscience (2nd ed.). W. B. Saunders Co.
9. Kandel, E. R., Schwartz, J. H., & Jessell, T. M. (2000). Principles of neural science (4th ed.). USA: McGraw-Hill.
10. Longmore, J., Wilkinson, I., & Rajagopalan, S. (2004). Oxford handbook of clinical medicine (6th ed.). Oxford: OUP.
11. Newman Dorland, W. A. (2003). Dorland's illustrated medical dictionary (30th ed.). W. B. Saunders Co.

12. Nolte, J. (2002). The human brain: An introduction to its functional anatomy (5th ed.). St Louis, MO: Mosby.
13. Community rehabilitation services for people with disabilities. ORV.C. Karan and Stephen Greenspan 1995.
14. Perspectives on disability and rehabilitation, contesting assumptions; challenging practice. Karen Whalley Hammell. Churchill Livingstone. Elsevier 2006
15. Clinical decision making in rehabilitation by John V. Basmajian and Sikhar N. Banerjee Churchill Livingstone. 1996.
16. Objective evaluation of impairment & ability in locomotor handicapped – RAMAR 1993; SAI Publications.
17. Sociology & health care an introduction for nurses & other health care professionals 2nd edition Churchill Livingstone – John Bond, Senga Bond.
18. Friendships & community connections between people with & without development disabilities by Angela Novak, Amado, Poul H Brookes Publishing company 1993.
19. Training manual for the trainer of community level functionary of medical rehabilitation. Units I to VIII by Dr.R.K.Srivastava sponsored by WHO.
20. Ethical foundations of health care responsibilities in decision making by Jane Singleton, Susan McLaren Mosby.
21. Disability evaluation – Demeter, Anderson, Smit, (Mosby)
22. Industrial therapy by Glenda. Z. Key Mosby 2002
23. Clinical reasoning in physical disabilities. Rebecca Dutton (Williams & Wilkins)
24. TB of preventive & social medicine. By Gupta & Mahajan JP-3rd edition.
25. Park's T.B. of preventive & social medicine. By K. Park, 15th edition.
26. Rehabilitation surgery for deformities due to Poliomyelitis. Techniques for the district hospital.
27. Physical Rehabilitation assessment and treatment 3rd edition, Susan B. Osullivan, Thomas J. Schmitz.
28. Impairment rating and disability evaluation. Rondinelli, Katz. (2000) WBSaunders.
29. Physical rehabilitation –Outcome measures 2nd edition Finch. Brooks. Stratford. Mayo (Lippincott, Williams & Wilkins)
30. Innovation in community care & primary health the Marylebone experiment by Patrick Pietroni, Christopher Pietroni. Churchill Livingstone.
31. Essential readings in rehabilitation outcomes measurement, application, Methodology & Technology. Edward A Dobrzykowski; Aspen Publications.

32. Community care for health professionals by Ann Compton & Mary Ashwin
2nd edition (Butterworth Heinemann).
33. Rehabilitation / restorative care in the community.
34. Shirley P Hoeman C.V.Mosby Company.Seidel, H. (1995). Mosby's guide
to physical examination. St Louis, MO: C.V. Mosby.
35. Cailliet, R. (1991). Neck and arm pain (3rd ed.). Philadelphia: FA Davis.
36. Cailliet, R. (1991). Shoulder pain (3rd ed.). Philadelphia: FA Davis.
37. Cailliet, R. (1991). Knee pain and disability (3rd ed.). Philadelphia: FA
Davis.
38. Cailliet, R. (1994). Hand pain and impairment (4th ed.). Philadelphia: FA
Davis.
39. Cailliet, R. (1995). Low back pain syndrome (5th ed.). Philadelphia: FA
Davis.
40. Cailliet, R. (1996). Soft tissue pain and disability (3rd ed.). Philadelphia:
FA
41. Davis.
42. Chaitow, L. (2005). Cranial manipulation: Theory and practice (2nd ed.).
43. Edinburgh: Churchill Livingstone.
44. Greenman, P. E. (2003). Principles of manual medicine (3rd ed.).
Philadelphia: Lippincott Williams & Wilkins.
45. Wilson, A. (2002). Effective management of musculoskeletal injury: A
clinical ergonomics approach to prevention. Churchill Livingstone.
46. Rehabilitation of the ageing & elderly patient by Gerald Felsenthal,Susan
47. J.Garrison, Franz U. Steinberg(Williams & Wilkins 1994)
48. Physical therapy of the geriatric patient by Jackson Osa.Churchill
Livingstone. New York.
49. 49. Geriatric physical therapy: A clinical approach by Carole B. Lewis and
Jennifer Bottomley(1993).
50. Geriatric rehabilitation manual by Timothy L.Kauffman (1999).
51. Manual of geriatric rehabilitation by David X.Cifu(2003).
52. Functional fitness for older adults by Patricia A. Brill(2004)
53. Epidemiology of ageing- An ecological approach by William A. Satariano
(Jones & Bartlett publishers, 2006).
54. Little black book of geriatrics, by Karen Gershman, McCullough Dennis 4th
Edition (Jones & Bartlett publishers, 2008)
55. Burnside's working with older adults, group process & techniques by
Barbara Haight, Faith Gibson; 4th edition (Jones & Bartlett publishers,
2005).
56. Geriatric care. A Textbook of geriatrics & gerontology, 2004& 2005.

57. Oxford textbook of geriatric medicine, J. Grimley Evans, T. Franklin Williams, B. Lynn Beatlie, J.P. Michel, G.K..Willcock. 2nd edition, 2000.
58. Geriatric medicine for students, Brocklehurst. J.C., 1976.
59. Geriatric secrets, Foricea.M.A, Mourey.R.J.L.-1996
60. Geriatric surgical emergencies by Joseph Harkins, 1963.
61. Current geriatric therapy, Covington,T.R.; 1984
62. Physiological basis of ageing & geriatrics, Timiras P.S.1994.
63. Handbook of Geriatric drug therapy; Eletcher.K.
64. Physiotherapy practice in residential aged care; Jennifer C Nitz; Susan. R.Hourigan.2004.
65. Principles of geriatric physiotherapy, Narinder kaur Multani, Satish kumar Varma; 2007.
66. Naturopathy for the elderly ; Dr. H.K. Bakhru-1999
67. D.K.James et al. High Risk Pregnancy-management options, Saunders-An imprint of Elsevier.
68. Margaret Polden, Jill Mantle, Physiotherapy in obstetric and gynecology, Butterworth-Heinemann, Linacre house, Jordan Hill, Oxford, 1990.
69. Ann Thomson, Tidy's physiotherapy, Varghese publishing House, Bombay.
70. Ruth Sapsford, Joanne Bullock-Saxton, Sue Markwell. Women's Health: A Textbook for Physiotherapists, 1997.
71. Scientific basis of human movement –Gowitzke, Williams and Wilkins, Baltimore, 1988, III edition.
72. Clinical biomechanics of spine – White A, and Panjabi- J, B. Lippincot, Philadelphia 1978.
73. Physiotherapy in Obstetrics and Gynaecology- 2nd edition- Jill Mantle Jeanette Haslam, Sue Bartom.
74. Forwarded by Professor Linda Cardow
72. Physiotherapy in Obstetrics & Gynaecology – Polden & Mantle, Jaypee Brothers, New Delhi, 1994.
73. D.C Datta -Textbook of Gynaecology. 1st edition
74. Women's Health- A textbook for Physiotherapists R.Sapsford J. Bullock. Saxton. S, Markwell.- (W.B.Saunders)
75. Obstetrics & Gynaecologic care in Physical Therapy- 2nd edition- Rebecca.C. Stephenson, Linda.J.O'contuor
76. Clinical Cases in Obstetreibs & Gynaecology- Hareh U. Doshi, published by Arihant publishers
77. Advances in Obstetrics & Gynaecology(vol 2)- Shalini Rajaram, Sumita Mehta,Niraj Goel(Jaypee brothers.

78. Physiotherapy Care for Women's Health – R. Baranitharan, V. Mahala Kshmi (jaypee brothers)
79. Williams Obstetrics- 22nd edition- F.Gary Cunningham, Krenneth J Leveno, Steven L Bloom.
80. Women's Health- 5th edition edited by Deborah Waller, Ann McPherso (oxford)
81. Steven G Gabbe, Jennifer.R. Niebyl Joe Leigh simpson- Obstetrics Normal &
82. Problem Pregnancies - 5th edition- associate editors : Henry Galon, Laura Guetzi, Mark Landson, Eric.R.M. Jauniau

Recommended Journals

1. Physical Therapy (APTA, America)
2. Physiotherapy (CSP, London)
3. American Journal of Physical Medicine & Rehabilitation
4. Physiotherapy (Canada)
5. Australian Journal of Physiotherapy
6. Journal of Indian Association of Physiotherapy
7. Clinical Kinesiology
8. Journal of Biomechanics
9. Pediatric Physical Therapy
10. Journal of Neurologic Physical Therapy
11. Journal of Rehabilitation Research & Development
12. Archives of Physical Medicine & Rehabilitation
13. Journal of Neurological Science
14. Clinical Rehabilitation
15. Spine
16. Gait & Posture

BRANCH: MASTER OF PHYSIOTHERAPY IN PAEDIATRICS
TITLE OF PAPER III: CLINICAL, PHYSICAL AND FUNCTIONAL DIAGNOSIS IN PAEDIATRICS
Duration: 0- 12 months Teaching Scheme Theory: 150 Hours Practical: 200 Hours
<p>LEARNING OBJECTIVES:</p> <p>The contents of the course have been developed in order to meet the universal standards of Physiotherapy and at the same time provide sufficient opportunities for research in the field of the Paediatric Physiotherapy. At the completion of this course curriculum, students are expected to be able to:</p> <ol style="list-style-type: none"> 1. Identify and apply key theoretical and practice approaches within paediatric physiotherapy 2. Understand the causes and investigations of various paediatric physiotherapy conditions 3. Identify clinical signs & symptoms and correlate them with other findings 4. Differentiate “Normal” from “Abnormal” findings on examination.

Course Description - Theory		
Sl. No	Content	Hours
1	Embryological development: Nervous System, Cardiovascular System, Musculoskeletal System, Respiratory System	06
2	Normal motor development (Prenatal, Infancy, and child hood)	10
3	Reflex maturation and reaction	04
4	Neuro-anatomy and neurophysiology: Basics of Growth and maturation of the nervous system in Paediatrics	10
5	Developmental screening and assessment of children using various scales. (Gross, fine, cognitive, speech and language, personal social and adaptive functions)	15
6	Pain assessment in neonates and children	06
7	Genetic basis of paediatric disorders and genetic counselling	05
8	Assessment of neonate and infant and related paediatric disorders: General, Musculoskeletal, Neurological and Cardiorespiratory condition	12
9	Pathomechanics of peripheral joints and spine, gait and posture in paediatrics	10
10	Principles of laboratory investigations for differential diagnosis and diagnostic imaging in paediatrics	09
11	Electrodiagnosis in paediatrics: FG test, SDC, NCV, SSEP, VEP, BAER, EMG, Single fibre EMG, Kinesiological EMG, Blink Reflex, Repetitive nerve stimulation, EEG	10
12	Development & Assessment of balance, coordination and gait	10
13	Growth - Principles, Methods and Normal values for Anthropometric measurements in children. Deviations / disorders and it's clinical and functional significance	07
14	Bowel and bladder function- Development & Assessment	07
15	Integration of assessment based on ICF guidelines of WHO in paediatric conditions	11
16	Evaluation of disability in paediatrics. Legislation and social care	09
17	Assessment of progressive locomotor disorders in Paediatrics - Neuropathic and Myopathic	09

BRANCH: MASTER OF PHYSIOTHERAPY IN PAEDIATRICS**TITLE OF PAPER IV: PHYSIOTHERAPY IN PAEDIATRICS****Duration: 13-24 months Teaching Scheme Theory: 150 Hours Practical: 250 Hours****LEARNING OBJECTIVES:**

This course has an international reputation and is a dynamic course which is based on contemporary best practice. It creates the opportunity for physiotherapists currently working in the pediatric area to be challenged both academically and clinically. A high level of expert tuition is provided for all units and clinical placements. This course focuses on the integration between evidence-based practice and current clinical practice. Clinical reasoning is fundamental to all assessment, treatment, management and rehabilitation for neurological, cardiac, respiratory and musculoskeletal disorders. It is designed to enhance knowledge, skill and clinical competencies in clinical practice, research and issues related to pediatric problems. Functional activity analysis including rehabilitation of all the systems in pediatric population are integrated into clinical practice. Throughout, the course, students re- view the literature critically and apply this information in the evaluation and management of pediatric disorders. Research projects will be completed in pediatric physiotherapy and manuscripts will be submitted to a peer review journal for publication.

Objectives:

The objectives of this programme are to:-

1. Provide students with detailed training in pediatric physiotherapy the ory and practice, including the use of other physiotherapy modalities.
2. Ensure that students practice from pediatric physiotherapy, whilst integrating western medical information as appropriate, to ensure that graduates are safe and competent in the practice of pediatric physiotherapy universally.
3. Provide students with quality clinical experience in hospitals and complementary health clinics from day one of the program.
4. Providestudentwithopportunitiesforresearchandhigherdegreeinpediatric physiotherapy on the completion of their undergraduate degree.

Course Description - Theory

Sl. No	Content	Hours
1	Application of Neuroanatomy and neurophysiology in Growth and maturation of the nervous system	08
2	Management of pain in neonates and children	03
3	Management of balance, coordination & gait disorders in	08

	Paediatrics	
4	Clinical symptomatology and patho-physiology and management of congenital and acquired locomotor/musculoskeletal, neurological and cardiopulmonary disorders in children	09
5	Maturational, Pathophysiological and recovery process in the CNS	03
6	Early intervention - high risk babies, Neonatal care and management in ICU	09
7	Prosthetic and orthotic management and care in paediatric conditions	06
8	Management of Autism, ADHD, Learning Disabilities, Meningitis, Encephalitis, Brain abscess, Tuberculosis, Rabies in paediatrics	15
9	Assessment and management of immune-compromised children	03
10	Management of neuro paediatric patients	02
11	Motor learning and motor control – Theory, Techniques and Applications	06
12	Neurophysiological approaches: Historical background. Basic principles, Philosophies, Evaluation, Principles and Techniques of application. - Roods, Brunnstrom, Volta, PNF, MRP, NDT	05
13	Disorders of perception and cognition	03
14	Oromotor disorders in children - assessment and management	02
15	Sensory integration disorders - Assessment and management	08
16	Movement disorders in paediatrics- chorea, athetosis, dystonia, ataxia, choreo athetosis, hemiballismus	05
17	Bowel and bladder function- dysfunctions and management.	05
18	Metabolic disorders in paediatrics. - Assessment and management	03
19	Developmental anomalies –Neural tube defects, craniovertebral anomalies, syringomyelia, hydrocephalus	10
20	Traumatic brain and spine injuries in children	06
21	Birth injuries - BPI	03
22	Burn rehabilitation in children	05
23	Paediatric surgeries and its pre-operative and post-operative management	08
24	Paediatric oncology and role of physiotherapy	05
25	Physical therapy in schools	05
26	Sports and fitness in paediatrics	05

BRANCH: MASTER OF PHYSIOTHERAPY IN PAEDIATRICS		
TITLE OF PAPER V: RECENT ADVANCES AND EVIDENCE BASED PRACTICE IN PHYSIOTHERAPY IN PAEDIATRICS		
Duration: 13-24 months Teaching Scheme Theory: 150 Hours Practical: 200 Hours		
LEARNING OBJECTIVES:		
Upon completion of the study of this course material, the paediatric physiotherapy professionals are expected to be able to:		
<ol style="list-style-type: none"> 1. Define Evidence Based Practice (EBP) and Evidence Based Decision Making (EBDM) 2. Critically appraise recent paediatric physiotherapy related literature from journals & adopt diagnostic & therapeutic procedures based on it 3. Demonstrate an expertise in applying the various results of evidence-based skills in their clinical practice and outcome measures 		
Course Description - Theory		
Sl. No	Content	Hours
1	EBP in the analysis of fitness and exercise prescription for special paediatric populations – cerebral palsy, downs syndrome, polio, muscular dystrophy, juvenile diabetes and obesity	15
2	Recent advances in Paediatric Physical Therapy techniques: SI, CIMT, MFR, Motor Imagery, Virtual Reality, Mirror Therapy, Hippotherapy, Hydrotherapy, Play Therapy, Biofeedback	20
3	Outcome measures to assess effectiveness of treatment in paediatric rehabilitation	08
4	Recent advances in integrated approach in management of paediatric disorders	10
5	Mother and child care	07
6	Vocational rehabilitation in children	05
7	EBP for exercise prescription for home program, report writing for clinical cases and research in paediatrics	10
8	Problem Based Learning in clinical conditions relevant to paediatrics	15
9	Recent advances in prescription of adaptive and assistive equipment for challenged children	15
10	EBP in Exercise testing and physical fitness in children with and without disability - ROM, Muscle strength, Body composition, Cardiac efficiency tests, Spirometry and Endurance and skills	15
11	Recent advances in pain management and palliative care in paediatrics	10
12	Community based rehabilitation in paediatric conditions	10
13	Recent advances in Equipment, assessment & treatment in Neonatal & paediatric ICUs	10

Recommended Reading for Master of Physiotherapy in Paediatrics (all 3 specialty papers)

1. Shepherd, R. B. (1995). *Physiotherapy in paediatrics*, 3/e. Heinemann Medical Books.
2. Campbell, S. K. (Ed.). (1999). *Decision making in pediatric neurologic physical therapy*. Churchill Livingstone
3. Case-Smith, J. (Ed.). (1998). *Pediatric occupational therapy and early intervention*, 2/e. Butterworth- Heinemann
4. Molnar, G. E., & Alexander, M. A. (1999). *Pediatric rehabilitation*, 3/e. Hanley & Belfus,
5. Dubowitz, V. (1995). *Muscle disorders in childhood*, 2/e. Bailliere Tindall.
6. Gallahue, D. L., Ozmun, J. C., & Goodway, J. (2006). *Understanding motor development: Infants, children, adolescents, adults*, 4/e. Mcgraw-hill.
7. Bly, L., & Whiteside, A. (1998). *Facilitation techniques based on NDT principles*. Psychological Corporation.
8. Stamer, M. H. (2015). *Posture and movement of the child with cerebral palsy*. PRO-ED, Incorporated.
9. Rennie, J. M., & Kendall, G. (2013). *A Manual of Neonatal Intensive Care*, 5/e. CRC Press.
10. Illingworth, R. S. (2002). *The normal child: some problems of the early years and their treatment*, 10/e. WB Saunders Company.
11. Illingworth, R. S. (2013). *The development of the infant and young child: Normal and abnormal*, 10/e. Churchill Livingstone.
12. Hurlock, E. B. (1978). *Child growth and development*, 5/e. Tata McGraw-Hill Education.
13. Burns, Y., MacDonald, J. (1998). *Physiotherapy and the growing child*. Harcourt Brace
14. Fanaroff, J. M., & Fanaroff, A. A. (2012). *Klaus and Fanaroff's Care of the High-Risk Neonate*, 6/e. Elsevier Health Sciences.
15. Jenson, H. B., Kliegman, R. M., Behrman, R. E. (2003). *Nelson Textbook of Pediatrics*, 17/e. Elsevier Health Sciences.
16. Effgen, S. K. (2012). *Meeting the physical therapy needs of children*. FA Davis.
17. Armstrong, N., & Van Mechelen, W. (Eds.). (2008). *Paediatric exercise science and medicine*. Oxford University Press.
18. Paul, V. K., Bagga, A. (201). *Ghai essential pediatrics*, 9/e. CBS Publishers & Distributors Pvt. Ltd.

19. Wilhelm, I. J. (Ed.). (1993). *Physical therapy assessment in early infancy*. Churchill Livingstone.
20. Gupte, S. (2016). *The Short Textbook of Pediatrics*, 10/e. JP Medical Ltd.
21. Long, T. (2018). *Handbook of pediatric physical therapy*, 2/e. Lippincott Williams & Wilkins.
22. Fenichel, G. M. (2009). *Clinical pediatric neurology: a signs and symptoms approach*, 5/e. Elsevier Health Sciences.
23. Parthasarathy, A. (2016). *IAP Textbook of pediatrics*, 3/e. JP Medical Ltd.
24. Bly, L. (1994). *Motor skills acquisition in the first year: an illustrated guide to normal development*. Psychological Corp.
25. Dubowitz, L. M., Dubowitz, V., & Mercuri, E. (1999). *The neurological assessment of the preterm and full-term newborn infant*, 2/e. Cambridge University Press.
26. Pountney, T. (2007). *Physiotherapy for children*. Elsevier Health Sciences.
27. DeGangi, G. A. (2017). *Pediatric disorders of regulation in affect and behavior: A therapist's guide to assessment and treatment*. Academic Press.
28. DiFiore, J. (2013). *The complete guide to postnatal fitness*. A&C Black.
29. Campbell, S. K., Palisano, R. J., & Vander Linden, D. W. (2006). *Physical therapy for children*, 4/e. Saunders.
30. Haddad, G. G., Abman, S. H., & Chernick, V. (2002). *Chernick-Mellins basic mechanisms of pediatric respiratory disease*, 2/e. PMPH-USA.
31. Kliegman, R. M., Stanton, B. M., Geme, J. S., & Schor, N. F. (2015). *Nelson Textbook of Pediatrics*, 20/e, Vol 1, 2, 3. Elsevier Health Sciences.
32. Menkes, J. H., Sarnat, H. B., & Maria, B. L. (Eds.). (2006). *Child neurology*, 7/e. Lippincott Williams & Wilkins.
33. Levitt, S., & Addison, A. (2018). *Treatment of cerebral palsy and motor delay*, 5/e. Wiley-Blackwell.
34. Connolly, B. H., & Montgomery, P. (2005). *Therapeutic exercise in developmental disabilities*, 3/e. Slack Incorporated.
35. Stamer, M. H. (2015). *Posture and movement of the child with cerebral palsy*, 2/e. PRO-ED, Incorporated.
36. Bly, L. (1999). *Baby treatment based on NDT principles*. Therapy Skill Builders.
37. Dubowitz, V. (1980). *The floppy infant*, 2/e. Cambridge University Press.
38. Scherzer, A. L. (2000). *Early diagnosis and interventional therapy in cerebral palsy: an interdisciplinary age-focused approach*, 3/e. Informa Health Care.

39. Tecklin, J. S. (Ed.). (2008). *Pediatric physical therapy*, 5/e. Lippincott Williams & Wilkins.
40. Kimura, J. (2001). *Electrodiagnosis in diseases of nerve and muscle: principles and practice*, 4/e. Oxford university press.
41. Carr, J. H. (2011). *Neurological rehabilitation*, 2/e. Elsevier India.
42. Shumway-Cook, A., & Woollacott, M. H. (2007). *Motor control: translating research into clinical practice*, 2/e. Lippincott Williams & Wilkins.
43. Bundy, A. C., Lane, S. J., & Murray, E. A. (2002). *Sensory integration: Theory and practice*, 2/e. FA Davis.
44. Preston, D. C., & Shapiro, B. E. (2012). *Electromyography and Neuromuscular Disorders: Clinical- Electrophysiologic Correlations (Expert Consult-Online and Print)*, 2/e. Elsevier Health Sciences.
45. Latash, M. L. (2008). *Neurophysiological basis of movement. Human Kinetics*.
46. Bobath, K. (1991). *A neurophysiological basis for the treatment of cerebral palsy*. Cambridge University Press.
47. Schwartzman, R. (2008). *Neurologic examination*, 1/e. John Wiley & Sons.
48. Ellis, E. (2005). *Science-based rehabilitation: theories into practice*, 1/e. Elsevier Health Sciences.
49. Miller, F. (Ed.). (2007). *Physical therapy of cerebral palsy*. Springer Science & Business Media.
50. Barnes, M. P., & Johnson, G. R. (Eds.). (2008). *Upper motor neurone syndrome and spasticity: clinical management and neurophysiology*, 2/e. Cambridge University Press.
51. Schmidt, R. A., Lee, T. D., Winstein, C., Wulf, G., & Zelaznik, H. N. (2018). *Motor control and learning: A behavioral emphasis*, 4/e. Human kinetics.
52. Schmidt, R. A., & Wrisberg, C. A. (2008). *Motor learning and performance: A situation-based learning approach*, 4/e. Human kinetics.

Reference Books:

1. Silver, L. B. (1984). *The misunderstood child: A guide for parents of learning disabled children*. New York: McGraw-Hill.
2. Shanti, G. (1998). *Know Your Child: A Handbook for Parents*. New Delhi: Jay Pee Brothers.
3. Finnie, N. R. (1997). *Handling the Young Child with cerebral Palsy at Home*. Boston: Butterworth-Heinemann.
4. Brooks-Scott, S. (1999). *Handbook of Mobilization in the Management of Children with Neurologic Disorders*. Butterworth Heinemann: Boston.
5. Holmes, G. L., Jones, H. R., & Moshé, S. L. (2006). *Clinical neurophysiology of infancy, childhood, and adolescence, 1/e*. Elsevier Inc..
6. Sinclair, M. (2004). *Pediatric massage therapy, 2/e*. Lippincott Williams & Wilkins.
7. Morris, S. E., Klein, M. D., & Klein, D. M. (2001). *Pre-feeding skills: a comprehensive resource for mealtime development, 2/e*. New York, NY: Academic.
8. Cowden, J. E., Sayers, L. K., & Torrey, C. C. (1998). *Pediatric adapted motor development and exercise: An innovative multisystem approach for professionals and families*. Charles C Thomas Pub Limited.
9. Vergara, E., & Bigsby, R. (2004). *Developmental and therapeutic interventions in the NICU*. Brookes Pub.
10. Capute, A. J., & Accardo, P. J. (1991). *Developmental disabilities in infancy and childhood*. Paul H Brookes Pub Co.
11. Kenner, C., & McGrath, J. (Eds.). (2004). *Developmental care of newborns & infants: A guide for health professionals*. Mosby Incorporated.
12. Piper, M. C., Darrah, J., Maguire, T. O., & Redfern, L. (1994). *Motor assessment of the developing infant*. Philadelphia: Saunders.
13. Polin, R. A., Fox, W. W., & Abman, S. H. (2011). *Fetal and Neonatal Physiology: Expert Consult-Online and Print, Vol. 1*. Elsevier Health Sciences.
14. Harrison, H., & Kositsky, A. (1983). *The Premature Baby Book: A Parents Guide to Coping and Caring in the First Years*. Macmillan
15. McClure, V. (2018). *Infant massage: A handbook for loving parents*. Souvenir Press Ltd.

16. Boehme, R. (1990). Approach to Treatment of the Baby. Therapy Skill Builders.
17. Boehme, R. (1990). Developing mid-range control and function in children with fluctuating muscle tone. Communication Skill Builders.
18. Jaeger, L. (1987). Home program instruction sheets for infants and young children. Therapy Skill Builders.
19. Armstrong, N. (Ed.). (2007). Paediatric exercise physiology. Elsevier Health Sciences.
20. Kramer, P. (2018). Frames of reference for pediatric occupational therapy, 3/e. Lippincott Williams & Wilkins.
21. Singh, M. (2017). Care of the new born, 8/ed. CBS Publishers & Distributors Private Limited.
22. Rennie, J. M., Hagmann, C. F., & Robertson, N. J. (2008). Neonatal cerebral investigation. Cambridge University Press
23. Arvedson, J. C., & Brodsky, L. (2002). Pediatric swallowing and feeding: Assessment and management. Cengage Learning.
24. Donaghy, M. (Ed.). (2001). Brain's diseases of the nervous system, 11/e. Oxford: Oxford University Press.
25. Umphred, Darcy Ann, Rolando T. Lazaro, Margaret Roller, and Gordon Burton, eds. (2013). Neurological rehabilitation, 6/e. Elsevier Health Sciences.
26. Cohen, H. S. (Ed.). (1999). Neuroscience for rehabilitation. Lippincott Williams & Wilkins.
27. Sawner, K. A., LaVigne, J. M., & Brunnstrom, S. (1992). Brunnstrom's movement therapy in hemiplegia: a neurophysiological approach, 2/e. Lippincott.
28. Lee, H. J., & DeLisa, J. A. (2005). Manual of nerve conduction study and surface anatomy for needle electromyography, 3/e. Lippincott Williams & Wilkins.
29. Butler, D. S., & Jones, M. A. (1991). Mobilisation of the nervous system. Elsevier Health Sciences.
30. Taly, A. B., Nair, K. S., & Murali, T. (2001). Neurorehabilitation Principles & Practice, 2/e. Ahuja Book Company Pvt. Ltd.
31. Fredericks, C. M. (1996). Pathophysiology of the motor systems: principles and clinical presentations. C. M. Fredericks, & L. K. Saladin (Eds.). Philadelphia, PA: FA Davis.
32. Herdman, S. J., & Clendaniel, R. (2014). Vestibular rehabilitation, 2/e. FA Davis.

33. Patten, J. (1996). *Neurological differential diagnosis*, 2/e. Springer Science & Business Media.
34. Shacklock, M. (2005). *Clinical neurodynamics: a new system of neuromusculoskeletal treatment*. Elsevier Health Sciences.
35. Ropper, A. H. (2005). *Adams and Victor's principles of neurology*, 8/e.
36. Gillen, G. (2008). *Cognitive and perceptual rehabilitation: Optimizing function*. Elsevier Health Sciences.
37. Adler, S. S., Beckers, D., & Buck, M. (2007). *PNF in practice: an illustrated guide*, 2/e. Springer Science & Business Media.

Recommended journals:

1. Archives of Physical Medicine & Rehabilitation
2. Clinical Rehabilitation
3. Physical Therapy
4. Paediatric Physical Therapy
5. Physiotherapy
6. Paediatric Exercise Science
7. Journal of Developmental & Physical Disabilities
8. Physical Medicine & Rehabilitation
9. Physical & Occupational Therapy in Physical Therapy
10. Research in Developmental Disabilities
11. Physiotherapy Theory & Practice
12. Journal of Paediatric Rehabilitation Medicine
13. Motor Control
14. Indian Journal of Physiotherapy & Occupational Therapy
15. Developmental Medicine & Child Neurology



SDM College of Medical Sciences & Hospital



SDM College of Dental Sciences & Hospital



SDM College of Physiotherapy &
SDM Institute of Nursing Sciences



Shri Dharmasthala Manjunatheshwara University



SDM Research Institute for Biomedical Sciences



Panoramic View of Campus