

ATAL BIHARI VAJPAYEE MEDICAL UNIVERSITY
LUCKNOW

ORDINANCES & REGULATIONS

FOR

Masters in Physiotherapy (M.P.T.)

(4 semester programs)

BRANCHES/SPECIALIZATION

- 1.(ORTHOPEDECS)
- 2.(NEUROLOGY)
- 3.(CARDIOPULMONARY)
- 4.(SPORTS)
5. (OBTETRICS & GYNAECOLOGY)

From Academic Year 2021-2022 Onwards

Surya
28/4/22
Dr-Surya Kumar

P
28/4/22
Christina Kumari (Chairman)

Ram
(Dr. C. S. Ram)

Dr. A. Rohan
(Dr. A. Rohan)

Dr. A. Rohan
28 April 2022
मुख्यालय
आल बिहारी वाजपययी चिकित्सा विश्वविद्यालय
राजपुर प्रदेस, लखनऊ

SHORT TITLE AND COMMENCEMENT

These regulations shall be called the regulations for Master of Physiotherapy (M.P.T) Degree courses.

They shall come into force from the academic year 2021-2022 session onwards.

Programs :

1. **M.P.T** (Orthopaedics)
2. **M.P.T** (Cardio Pulmonary)
3. **M.P.T** (Neurology)
4. **M.P.T** (Sports)
5. **M.P.T** (Obstetrics and Gynecology)

Infrastructure and functional requirements

- (a) There should be a minimum of 1200 sq. ft of space for each specialty
- (b) In addition to the requirement for undergraduate program adequate number of standard equipments should be available as per Annexure.

Nature: Regular and Full Time

Candidates shall be required to register himself/herself as a postgraduate student before admission to the course.

Candidates shall not be enrolled in any other university or any other course during the period he/she is enrolled for the M.P.T Programs.

Duration: 4 semesters for each specialty designated as I,II,III,IV semester.

Pattern: Semester System

Signature

Signature

Signature

Signature

Signature

Examination for the degree of Master of Physiotherapy shall be held at the end of semester.

Medium of Instructions and Examination:

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

Student Learning time (SLT) for M.P.T Course:

The total student learning time (SLT) for M.P.T course will be 2150 hrs for a duration of 4 semesters which includes Lectures, seminars, Practicals, demonstrations, Clinical discussions, clinical case presentations, Journal club, Classroom teaching, undergraduate teaching, Library, Clinical training, synopsis and dissertation work, community camps. Field visits, participation in workshops and conferences.

Eligibility Criteria for Admission

Professional Qualification- A candidate seeking admission to degree in M.P.T must have completed the degree of Bachelor of Physiotherapy with 6 months compulsory internship from any recognized Institute or University in India or a degree of a foreign university recognized as equivalent with at least 50% marks in aggregate.

Admission to Masters of Physiotherapy course shall be made on the merit list/entrance test to be conducted for the purpose. No candidate will be admitted on any ground unless he/she has appeared in the test/merit.

Mode of Admission: On the basis of merit list/ entrance examination

- i) Total Seats : 15 seats in each Speciality
- ii) Span Period: Not more than four years

Surya [Signature] [Signature] [Signature] [Signature] [Signature]

Minimum Qualification for teachers for teaching MPT students:

Recommended speciality faculty with qualification as per U.G.C. norms and from core subjects (incorporated in curriculum & syllabus). All teaching faculty should be duly approved by the University.

Faculty for MPT will be in addition to the existing faculty for BPT Course and duly approved by the University for teaching MPT Course. It is recommended that a faculty and student ratio of 1:3 for PG course. Qualification of the guide should be minimum 5 years of teaching experience in Physiotherapy with minimum 3 years of teaching experience.

Total number of minimum faculty for all the two years will be as follows -:

Dean/Principal - 01

Each Speciality

Professor - 01

Associate Professor - 02

Assistant Professor - 06

QUALIFICATIONS, EXPERIENCE AND OTHER ELIGIBILITY REQUIREMENTS FOR APPOINTMENT OF PHYSIOTHERAPY TEACHERS

I. ASSISTANT PROFESSOR: Bachelor's Degree in Physiotherapy (B.P.T./B. Th.P./B.P.Th.), Master's Degree in Physiotherapy (M.P.Th/M.Th.P./M.Sc. P.T/M.P.T./ MSPT) with at least 55% marks (or an equivalent grade in a point scale wherever the grading system is followed) from a recognized University.

II. ASSOCIATE PROFESSOR: i) Essential: A Master's Degree in Physiotherapy (M.P.T./M.P.Th./M.Th.P/M.Sc. P.T./ MSPT) with eight years' experience as Assistant Professor. ii) Desirable: Higher Qualification, such as Ph.D. degree in any discipline of Physiotherapy recognized by the

U.G.C, and published work of high standard in peer-reviewed or UGC - listed journals.

III. PROFESSOR: Essential: Master's Degree in Physiotherapy (M.P.T./M.P.Th./M.Th.P./M.Sc. P.T./MSPT), with ten years' experience. Desirable: (i) Higher Qualification like Ph. D. in any subject of Physiotherapy recognized by U.G.C, and (ii) Published work of high standard in peer - reviewed or UGC- listed journals.

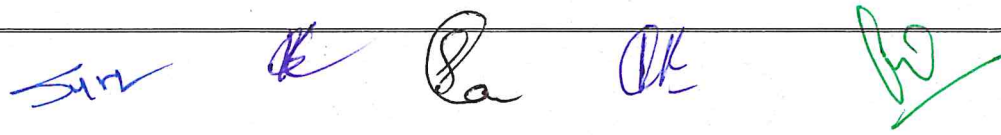
IV. PRINCIPAL /DEAN: Essential: Master's Degree in Physiotherapy (M.P.T./M.Th.P./M.Pth./M.Sc. P.T./MSPT) with fifteen years total teaching experience, (i) Senior-most Professor shall be designated as the Principal / Dean (Physiotherapy). (ii) Desirable: Higher qualification like Ph.D. in any discipline or Physiotherapy recognized by the UGC and published work of high standard in peer reviewed or UGC listed journals.

All teaching faculty should be full-time. The University will conduct regular faculty development programs, refresher courses, orientation programs, induction programs for developing the teaching and research skills of the faculty.

Appointment of Examiners:

The Examiners shall be appointed by the University from amongst a panel of three external experts in Physiotherapy profession for each specialty who must hold at least Assistant Professor position in the department with a minimum of 5 years teaching and research experience or must be known scientists in the related area from established scientific organization/ Institute/ Department. On receipt of the dissertation, the dissertation shall be sent to one examiner of each speciality appointed by the Vice – Chancellor. The examination section of the University shall make all correspondence regarding the consent of examiners and shall also dispatch and receive the dissertation under secrecy.

Institutional Research Committee (R.C)



The institutional body which will consider the research proposals for degree of M.P.T shall be called the research committee. Following shall be the composition of the R.C.

- (i) Principal of the Physiotherapy college.
- (ii) One Professor/ Assoc. Prof of each specialty
- (iii) One Professor/Assoc. Prof from the College (Convener)

If the proposed research work entails experimental work on humans or work in the animal laboratory, the application shall be accompanied by a certificate from the Principal that clearance has been obtained from concerned Govt. approved Ethics Committee.

If the experimental study involves clinical trial (RCT), then the study should be registered with CTRI (Clinical trials registry of India).


External guide from outside Institution/place of clinical posting will be allowed to guide and supervise the research work of the candidate provided the external guide satisfies qualification as per norms.

The candidate shall meet and discuss with the guide the plans and progress of his/her research work when the guide ask him/her to do so.

The candidate shall submit the plans and progress of his/her research in a prescribed format once in 6 months. The progress reports will be reviewed by the Research Committee.

The candidate should publish at least one article in any indexed journal and it should be annexed in the dissertation.

When the dissertation is ready for submission to the university, the student shall also certify that the work presented in the dissertation is the candidate's own work and shall submit the draft thesis for plagiarism check in the University. The University will perform plagiarism checks of research work through an University approved software and only when it is satisfied



that the research work is free of plagiarism shall the thesis work be accepted for submission for award of marks.

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 or 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.

Periodic tests

The College may conduct periodic tests. The test may include written theory papers, practical and clinical tests in the pattern of university examination. Records and marks obtained in such tests will be maintained by the Head of Department and sent to the University, when called for.

The assessment will be comprised of Formative and Summative assessments comprising of -

1. Theory, inter-departmental meeting
2. Practical, clinical rounds and bed side evaluation & application.
3. Journal club
4. Dissertation
5. Open discussion, debate, Viva.
6. Seminars, recent advances, case presentation, discussion and clinical conference.

Graded responsibility in the care of patients and operative work (Structured Training Schedule of clinical & elective subjects only)

Sum

B

Pa

Pa

Pa

Category	I year MPT	II year MPT
O	20 Cases	20 Cases
A	20 Cases	30 Cases
PA	100 Cases	60 Cases
PI	20 Cases	50 Cases

Key: O – Observes, A – Assisted a more senior Physiotherapist, PA – Performed procedure under the direct supervision of a senior specialist. PI – Performed Independently

Learning Activities : Self Learning, Use of computers & library.

Participation in departmental activities;

- o Journal Review meetings
- o Seminars
- o Clinical presentation
- o Special clinics
- o Inter departmental meetings
- o Community work, camps / field visits
- o Clinical rounds
- o Dissertation work
- o Participation in conferences/ presentation of paper -Minimum 2 in two years
- o Any other – Specify (eg : CME)
- o Rotation and posting in department

DISSERTATION & RESEARCH PROJECT:

Surya ↓ Pa Ok [Signature]

The candidate eligible for admission in Master of Physiotherapy (M.P.T) shall submit a detailed synopsis (5 copies) signed by the guide and by the candidate:

1. The evidence of his/her qualification
2. The topic of same specialty for M.P.T
3. The subject of the proposed research and dissertation
4. The outline of the proposed research work.
5. The place/Institution where he/she proposes to carry on his/her research work.
6. The name of the guide under whom he/she proposes to carry on his/her research work.

Once the candidate is registered and enrolled for the admission in Master of Physiotherapy, he/she shall settle the subject of his/her dissertation work and prepare a brief outline under the guidance of the guide under whom he/she proposes to work and carry out his/her research works within three months of his admission to the program.

Note: A person shall not be appointed Guide to supervise his/her relatives (son, daughter, husband, wife, sister, brother and relative in law)

To consider the synopsis submitted for MPT programme of the University for approval the University shall look into the following matters:

- i) That the candidate possesses the requisite qualifications.
- ii) Affidavit from the Management of the College that adequate and appropriate faculty and facilities exist at the place of research for the proposed work.



Documents to be submitted at the time of submission of the Dissertation

a. The dissertation shall be submitted three months prior to the final examination and approval of dissertation after plagiarism check will be the pre-requisite condition for the final examination eligibility.

b. The candidate shall submit three copies of his/her dissertation in a format prescribed by the University with 1 research publication in indexed journal as annexure.

c. Certificate from the guide to the effect that:-(i) The dissertation embodies the work of the candidate himself/ herself.

e. A Certificate from the Principal of the College to the effect that -The candidate has worked for the period prescribed under the ordinance and has put in the required attendance during that period at the place/s of research and no dues are pending against the candidate.

Evaluation of Dissertation

The examiners shall examine the dissertation and submit their detail report and send final recommendation which shall be in the following form:

a. The dissertation and any other contribution to the study of the subject of the candidate shall be evaluated by the examiners appointed by the University. The candidate shall be required to present him/herself at specified time and place to be tested orally or by means of written or practical or both.

b. A dissertation shall be treated as having been accepted on the recommendation of the examiners stating that the dissertation and research work carried out by the candidate is to their satisfaction.

Surya

R

Ca

OK

28/4/2022

c. If the examiner recommends revision, the candidate shall be permitted to submit the dissertation in a revised form within the time specified by the University.

Note: The copy of the dissertation in the library of the university and the library of the concerned college shall be kept.

Certificate of Supervisor/ Guide

This is to certify that work embodied in this dissertation entitled..... has been carried out by..... under my/our supervision and guidance.

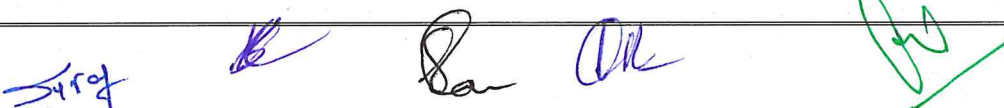
No part of this dissertation has been submitted for any other degree. The work included in this dissertation is original and is own work of the candidate.

Attendance

a. All students must attend every lecture/ practical / demonstration/ held in each subject. However, to account for late joining or other such contingencies, the attendance requirement for appearing in the examination shall be a minimum of 75% of the classes held from the date of admission.

b. In order to maintain the attendance record of a particular subject, a roll call will be taken by the teacher in every scheduled lecture and practical classes.

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



d. The statement of attendance of students shall be displayed on the Faculty notice board twice in each academic year. Copies of the same shall be kept in the Office of the Dean of the Faculty of the concerned Department for record. Notice displayed on notice board shall be deemed to be a proper notification and no individual notice to students will be necessary.

e. If a student is found to be continuously absent from the classes without information for a period of thirty days, the teacher in-charge shall report it to the Head of Department. The head will report it to the Registrar through the Dean. The Registrar will issue a notice to the concerned student as to why his/her admission should not be cancelled. The Registrar will take a decision on the cancellation of admission within thirty days of issue of the notice. A copy of the order shall be communicated to the student.

f. A student with less than 75% attendance in theory and practical separately of each subject in a semester shall be detained from appearing in the Semester Examination of the subject(s) in which the attendance is short. However, the Dean of the Faculty may consider to condone off attendance upto 5% after recommendation of the Principal on account of sickness or any other extenuating circumstances, provided the application to condone attendance is duly certified by a Registered Medical Practitioner, supported by documentary evidence has been submitted within seven days from recovery.

g. Students detained on account of shortage of attendance will have to seek re-admission to the same semester and will be allowed to appear in subsequent examinations if they achieve the attendance norms. However, a student will not be allowed to join in between the academic year and can only join with the next batch.

h. A MPT student will get half the summer and winter breaks only. Students will not get the autumn break. During the autumn break and the

Signature of the Dean, Registrar, and other officials.

working half of the summer/winter breaks the students will continue with their clinical posting for the full day at their respective placements.

INTERNAL ASSESSMENTS

A. Theory Examination

- a. Internal assessment shall be conducted for the concerned theory exam.
- b. Tests shall be held towards each subject in the semester..
- c. Tests can be taken by the concerned teacher as and when he/she requires, which includes written tests, pro-seminars, quizzes, assignments, group discussions etc.
- d. The marks of the test would be displayed on the notice board within ten days of completion of the exam.
- e. The Head shall display a copy of the complied sheets of Internal Assessment marks of all the theory papers before forwarding it to the Assistant Registrar Examinations at the conclusion of the session.

B. Practical Examination

- a. Internal Assessment of the Practical exam is based on the monthly report of the clinical posting obtained from the student, case discussions held from time to time and the report of clinical posting as

Surya

obtained from time to time from the concerned Head where the student is undergoing his/her clinical practice.

b. The promoted / ex-student who has to re-appear in the examination will retain Internal Assessment marks previously submitted to the University.

C. Oral Exam

Marks of the Internal Assessment will be given on the basis of the oral exam conducted during the Major tests.

D. **Marks distribution:** of the Internal Assessment is mentioned under Course Structure (Sub head 3b) in Curriculum and Syllabus.

SEMESTER SYSTEM EXAMINATION

THEORY PAPERS:

Mode : Written only

Duration : 03 hours each

Examiner : 01 (external) from the panel of Examiners from university)

Moderation : For the papers set by the external examiners only. Change cannot be more than 30% by the Head of Department.

PRACTICAL

Singh

B

Pa OK

[Signature]

Mode : Long case assessment, short case, written, Demonstration, investigations and Viva.

Duration : Up to 10 candidates per day

Examiner : 02 (one internal and one external from the Panel of examiners from university)

DISSERTATION

Mode : Presentation and Viva Voce

Duration : Up to 45 minutes

Examiner : 02 (one internal and one external from the Panel of examiners from university)

MINIMUM PASS MARKS

The minimum pass marks in each subject (theory and practical separately) shall be 50% of the aggregate of Internal Assessment and Semester Examination marks.

PROMOTION

- a) A candidate will be promoted from a semester to next semester if he/she has passed in each of the theory and practical examination separately.
- b) The candidate may carry over a maximum of two theory paper to the next semester. He/she will have to clear the theory paper/s in the next examination (along with his/her semester papers) failing which his/her admission will be cancelled.



- c) If the candidate fails in more than two theory papers he/she will have to re-appear in all papers of the concerned semester as an ex-student*. Or seek re-admission.
- d) If the candidate fails in a practical examination, he/she will have to re-appear in all the papers in the Semester Examination as an ex-student or seek re-admission.

CLINICAL TRAINING

The candidate has to undergo the compulsory clinical training over the span of four semesters from the Institution/recognized hospital.

AWARD OF DEGREE

The candidate shall be awarded a Degree Certificate only when he/she has earned a total of 84 credits of the program on successful completion of all the courses and the submission and approval of the dissertation.

CLASSIFICATION OF SUCCESSFUL CANDIDATE

The result of the successful candidate shall be classified at the end of the IV semester examination on the basis of the aggregate of all subjects (theory and practical) secured by the candidate in the I, II, III semester examination as indicated below:

First Division : 60% and above

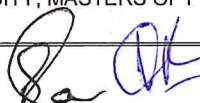
Second Division : 50% and above, but less than 60%


Students securing 75% or above marks in any course (s) and who have passed the entire examination in the first attempt shall be declared to have obtained Distinction in that course(s).

SPAN PERIOD









- a. The student must pass the first semester examination within two years of their first admission/re-admission to the program, otherwise the admission of the candidate shall be deemed cancelled.
- b. The student must pass the IV semester within four years of their first admission/ re-admission.

QUALIFICATION DESCRIPTORS:

Apply (i) Advanced and up-to-date knowledge and excel in the academic field of study as a whole and its applications, and links to related disciplinary areas/subjects of study; including a critical understanding of the established theories, principles and concepts, and of a number of advanced and emerging issues in the field of Physiotherapy (ii) Procedural knowledge that creates different types of professionals related to the Physiotherapy, including research and development, teaching and in government and public service; (iii) Professional and communication skills in the domain of Physiotherapy, including a critical understanding of the latest developments, and an ability to use established techniques in the domain of Physiotherapy.

Possess comprehensive knowledge about Physiotherapy, including current research, scholarly, and/or professional literature, relating to essential and advanced learning areas pertaining to the field of study, and techniques and skills required for identifying problems and issues.

Proficient skills in i) identifying the issues in health care needs; ii) collection of quantitative and/or qualitative data relevant to client's needs and professional practice; iii) analysis and interpretation of data using methodologies as appropriate for formulating evidence based hypotheses and solutions.

Suraj *B* *Se* *OK* *SO*

Apply knowledge, understanding and skills for critical assessment of a wide range of ideas and complex problems and issues relating to Physiotherapy in various specialties.

Communicate efficiently with all stakeholders, and provide relevant information to the members of the healthcare team.

Optimize one's own learning needs relating to current and emerging areas of study, making use of research, development and professional materials based on new frontiers of knowledge.

Execute one's disciplinary knowledge and transferable skills to new/unfamiliar contexts and to identify and analyse problems and issues and seek solutions to real-life problems.

PROGRAM EDUCATION OBJECTIVES (PEOs)

The overall objective of the learning outcome-based curriculum framework (LOCF) for MPT are as follows:

PEO No.	Education Objective
PEO 1	Students will be able to apply advanced body of knowledge and clinical competency with evidence based practice in Physiotherapy to achieve professional excellence.
PEO 2	Students will execute high order skills in analysis, critical evaluation and/or professional application of clinical and practical skills in Physiotherapy
PEO 3	Students will practice the profession by ethical norms and communicate effectively with the

Handwritten signatures in blue and green ink at the bottom of the page.

	multi-disciplinary team.
PEO 4	Students will acquire creative proficiency in interpersonal and collaborative skills to identify, assess and formulate problems and execute the solution.
PEO 5	Students will synthesize research ideas, develop innovations, incubate new concepts and encourage entrepreneurship.
PEO 6	Students will display lifelong learning process for a highly productive career and will be able to relate the concepts of Physiotherapy towards serving the cause of the society.

GRADUATE ATTRIBUTES

S No.	Attribute	Description
1.	Professional Knowledge	Critically appraise scientific knowledge and integrate evidence based practice as a health care professional
2.	Clinical / practical skills	Apply clinical / practical skills to prevent, assess and manage quality health care services
3.	Communication	Displays empathetic and professional communication skills to patients/clients, care- givers, other health professionals and other members of the community
4.	Cooperation/Team work	Ability to practice collaboratively and responsibly with multidisciplinary team members to deliver high quality health care


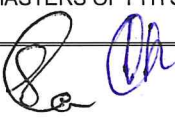
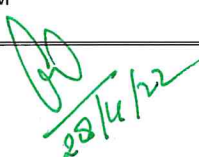
Surya *B* *Pa* *DL* *AD*

5.	Professional ethics	Ability to resolve ethical issues and practice the ethical values in the professional life
6.	Research / Innovation-related Skills	Ability to generate and investigate research questions and translate the evidence into clinical practice.
7.	Critical thinking and problem solving	Ability to reason and judge critically and provide solutions for real life situations
8	Reflective thinking	Employ reflective thinking along with sense of awareness of one self and society
9	Information/digital literacy	Excel in use information communication and technology in ongoing learning situations
11.	Multi-cultural competence	Ability to effectively lead and respond in a multicultural society
12.	Lifelong Learning	Demonstrate the ability to acquire knowledge and skills that are necessary for participating in learning activities throughout life, through self-paced and self-directed learning aimed at personal development, meeting economic, social and cultural objectives, and adapting to demands of work place through knowledge/skill development/reskilling.

PROGRAM OUTCOMES (POs):

After successful completion of Master of Physiotherapy program, students will be able to:

PO No.	Attribute	Competency
PO 1	Professional knowledge	Apply current evidence and scientific knowledge to work as an expert member of health care system

Surya   
28/4/22

PO 2	Clinical/ Technical skills	Employ clinical skills to provide quality health care services
PO 3	Team work	Empower the team with shared goals with the interdisciplinary health care team to improve societal health
PO 4	Ethical value & professionalism	Impart ethical values and professionalism within the legal framework of the society
PO 5	Communication	Communicate professionally with the multidisciplinary health care team and the society
PO 6	Evidence based practice	Appraise and adopt high quality evidence based practice that leads to excellence in professional practice
PO 7	Life-long learning	Advance knowledge and skills with the use of recent technology for the continual improvement of professional practice
PO 8	Entrepreneurship , leadership and mentorship	Build entrepreneurship, leadership and mentorship skills to practice independently as well as in collaboration with the multidisciplinary health care team

COURSE OUTCOMES

CO-1: The Students will be able to use the basic medical sciences knowledge in assessment and investigation of various diseases and disorders.

CO-2: On completion of the study of this course the student should be able to identify and apply the principles of biomechanics and kinesiology in understanding the normal functioning of the human body.

Suraj B. P. A. K. S.

CO-3: On completion of the study of this course the student should be able to select and administer using exercise guidelines to interpret results, and drafting an therapeutic exercise prescription to different populations and conditions.

CO-4: On completion of the study of this course the student should be able to understand the methods of research process and design so as to effectively plan a research.

CO-5: To understand the statistical measures used in the analysis and interpretation of research data.

CO-8: On completion of this course the student should be able to select and administer electrodiagnostic tests, interpret results.

CO-9: The student shall learn the knowledge and skills on various electrotherapeutic agents, advanced techniques and physiological responses of therapeutic electro-agents.

CO-10: The student should be able to perform a comprehensive and complete Physiotherapy assessment of various patients.

CO-11: To document systematic, meaningful, accurate written records of the patient.

CO-12: The student should be able to compare & contrast the outcome of various physiotherapy approaches.

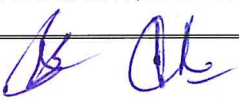
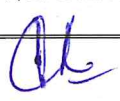
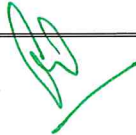
CO-13: The Students will be able to use this information in planning and tailoring effective, specific, safe Physiotherapy treatment programmes.

CO-14: The student should be able to demonstrate adequate knowledge and skill in physiotherapy clinic and department management.

CO-15: On completion of the study of this Course the student should be able to identify and apply the principles of biomechanics and kinesiology in understanding patho-mechanics of various specialty wise conditions. To use these principles in managing various specialty wise conditions.

CO-16: The student should be able to demonstrate adequate knowledge in pedagogy and educational philosophy.

CO-17: The student should be able to demonstrate adequate knowledge and skill in physiotherapy teaching and learn ways to effectively teach physiotherapy undergraduate students.

54.94   

CO-18: Explain the psychology of human behavior as it relates to workplace safety; identify ergonomic hazards; recommend appropriate controls, and relate the human and workplace factors which contribute to ergonomic hazards.

CO-19: The student should be able to demonstrate adequate knowledge of ethics, medico-legal laws, professional laws and issues in India and abroad and demonstrate ethical behaviors in practice.

CO-20: On completion of this course the student should be able to Oral Presentations at Conferences/Seminars. Students must publish/present at least one research paper at a National Level Conference/ International Level Journal. The student needs to publish at least one research paper in any indexed journal..

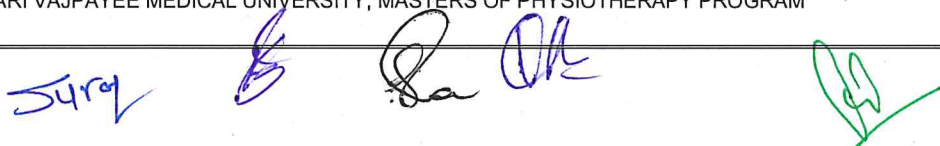
Program Outcomes (POs) and Course Outcomes (COs) Mapping

Sem.	Program Outcomes	Course Code	Course Title	Course Outcomes
I	PO1- Professional Knowledge PO2- Clinical/ Technical Skills	MPT101	Basic Medical Sciences	CO1
I	PO1- Professional Knowledge PO2- Clinical/ Technical Skills	MPT 102	General Bio-mechanics	CO2
I	PO1- Professional Knowledge PO2- Clinical/ Technical Skills	MPT 103	Exercise Physiology	CO3
I	PO6-Evidence Based Practice	MPT 104	Research Methodology Biostatistics & Evidence Based Practice	CO4 CO5 CO6
I	PO1- Professional Knowledge PO2- Clinical/ Technical Skills PO5-Communication PO6-Evidence Based Practice PO7- Life long Learning	MPT 105	Clinics & Seminars Presentations	CO9, CO10 CO11 CO12 CO14 CO19



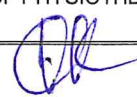

Handwritten signatures and a green checkmark are present at the bottom of the page.

II	PO1- Professional Knowledge PO2- Clinical/ Technical Skills	MPT201	Electrophysiology	CO8 CO10 CO11
II	PO1- Professional Knowledge PO2- Clinical/ Technical Skills PO5-Communication PO6-Evidence Based Practice PO7- Life long Learning	MPT 202	Advances in Physiotherapy Assessment	CO8 CO10 CO11 CO13
II	PO1- Professional Knowledge PO2- Clinical/ Technical Skills PO5-Communication PO6-Evidence Based Practice PO7- Life long Learning	MPT 203	Advances in Physiotherapy Techniques	CO3 CO10 CO11 CO12 CO13
II	PO1- Professional Knowledge PO2- Clinical/ Technical Skills	MPT 204	Specialty Wise Disorders: Medical & Surgical Management	CO1
III	PO1- Professional Knowledge PO5-Communication PO7- Life long Learning	MPT 301	General Principles of Pedagogy	CO16 CO17
III	PO5-Communication PO7- Life long Learning PO8- Entrepreneurship/Leadership	MPT 302	Clinic Management & Administration	CO14
III	PO1- Professional Knowledge PO2- Clinical/ Technical Skills	MPT 303	Speciality wise Biomechanics	CO2 CO10 CO15
III	PO1- Professional Knowledge PO2- Clinical/ Technical Skills PO5-Communication PO6-Evidence Based Practice PO7- Life long Learning	MPT 304	Specialty wise Advances in Physiotherapy Assessment & Management-I	CO3 CO8 CO10 CO11 CO12 CO13

Suraj S Sa OR



III	PO5-Communication PO6-Evidence Based Practice PO7- Life long Learning	MPT 305P	Dissertation	CO4 CO5 CO6 CO7 CO20
IV	PO5-Communication PO6-Evidence Based Practice PO7- Life long Learning	MPT 401	Teaching Methodology in Physiotherapy	CO16 CO17
IV	PO5-Communication	MPT 402	Ethical Legal & Professional Issues	CO14 CO19
IV	PO1- Professional Knowledge PO2- Clinical/ Technical Skills PO5-Communication PO6-Evidence Based Practice PO7- Life long Learning	MPT 403	Specialty wise Advances on Physiotherapy Assessment & Management-II	CO3 CO8 CO10 CO11 CO12 CO13
IV	PO2- Clinical/ Technical Skills PO5-Communication PO6-Evidence Based Practice PO7- Life long Learning	MPT 405	Clinics & Seminars Presentations	CO9, CO10 CO11 CO12 CO14 CO19
IV	PO5-Communication PO6-Evidence Based Practice PO7- Life long Learning	MPT 305P	Dissertation	CO4 CO5 CO6 CO7 CO20

Suraj    

SCHEDULE – I

MODEL CHECKLIST FOR EVALUATION OF JOURNAL REVIEW PRESENTATIONS.

Name of the Trainee :

Date :

Name of the Faculty / Observer :

Sl. No.	Items for observation during presentation	Poor 0	Below Average 1	Average 2	Good 3	Very Good 4
1.	Article chosen was					
2.	Extent of understanding of scope and objectives of the paper by the candidate.					
3.	Whether cross-references have been consulted.					
4.	Whether other relevant publications consulted.					
5.	Ability to respond to questions on the paper / subject.					
6.	Audio – Visual aids used.					
7.	Ability to defend the paper.					
8.	Clarity of presentation.					
9.	Any other observation.					
Total Score						

SCHEDULE-II

MODEL CHECK LIST FOR EVALUATION OF SEMINAR PRESENTATIONS

Name of the Trainee :

Date :

Name of the Faculty / Observer :

Sl No.	Items for observation during presentation	Poor 0	Below Average 1	Average 2	Good 3	Very Good 4
1.	Completeness & Preparation.					
2.	Clarity of presentation.					
3.	Understanding of subject.					
4.	Whether other relevant publications consulted.					
5.	Whether cross-references have been consulted.					
6.	Ability to answer the questions.					
7.	Time scheduling.					
8.	Appropriate use of audio – visual aids.					
9.	Overall performance.					
10.	Any other observation.					
Total Score						

5472

P. 25

SCHEDULE-III

(a) MODEL CHECK LIST FOR EVALUATION OF CLINICAL WORK IN Outpatient Department

(To be completed once a month by respective unit heads including posting in other department)

Name of the Trainee :

Date :

Name of the Unit Head :

Sl. No.	Items for observation during presentation	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.					
6.	Investigations work up.					
7.	Chair-side manners.					
8.	Rapport with patients.					
9.	Over all quality of clinical work.					
Total Score						

(b) EVALUATION OF CLINICAL CASE PRESENTATION

Name of the Trainee :

Date :

Name of the Faculty / Observer:

Sl. No.	Items for observation during presentation	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					
6.	Accuracy of general physical examination.					
7.	Diagnosis: Whether it follows logically from history and findings.					
8.	Investigations required.					
	Complete list.					
	Relevant order.					
	Interpretation of investigations.					
9.	Ability to react to questioning Whether it follows logically from history and findings.					
10.	Ability to defend diagnosis.					
11.	Ability to justify differential diagnosis.					
12.	Others.					
Grand Total						

Note: Please use a separate sheet for each faculty member.

Handwritten signatures and initials in blue and green ink at the bottom of the page.

SCHEDULE-IV

MODEL CHECKLIST FOR EVALUATION OF TEACHING SKILL

Name of the Trainee :

Date :

Name of the Faculty / Observer :

Sl. No	Items for observation	Poor 0	Below Average 1	Average 2	Good 3	Very Good 4
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 and / or illustrations.					
6.	Speaking style (enjoyable, monotonous, etc. specify)					
7.	Attempts audience participation.					
8.	Summary of the main points at the end.					
9.	Asks questions.					
10.	Answers questions asked by the audience.					
11.	Rapport of speaker with his audience.					
12.	Effectiveness of the talk.					
13.	Uses audio-visual aids appropriately.					

SCHEDULE-V

(a) MODEL CHECKLIST FOR DISSERTATION PRESENTATION

Name of the Trainee :

Date :

Name of the Faculty / Observer :

Sl. No.	Prints to be considered.	Poor 0	Below Average 1	Average 2	Good 3	Very Good 4
1	Interest shown in selecting topic.					
2	Appropriate review.					
3	Discussion with guide and other faculty.					
4	Quality of protocol.					
5	Preparation of proforma					
	Total Score					

(b) CONTINUOUS EVALUATION OF DISSERTATION WORK BY GUIDE / CO-GUIDE

Name of the Trainee :

Date :

Name of the Faculty / Observer :

Handwritten signatures and initials at the bottom of the page, including a signature in blue ink on the left, several initials in blue ink in the center, a signature in green ink on the right, and the number '28' in blue ink at the far right.

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

SCHEDULE-VI

OVERALL ASSESSMENT SHEET

Date :

Sl. No.	Faculty Member	Name of Trainee and Mean Score									
		A	B	C	D	E	F	G	H	I	J
1											
2											
3											

Signature of Department In-charge

Signature of Principal

Note: The overall assessment sheet used along with the logbook shall form the basis for certifying satisfactory completion of course of study, in addition to the attendance required.

SCHEDULE-VII

EQUIPMENTS

The institution should have all the following equipments for MPT course (in addition to equipments as per BPT regulations)

Orthopedic Physiotherapy Laboratory

- Back Leg Chest Dynamometer
- Laser Therapy
- Microwave Diathermy
- Hand Evaluation Kit
- Pain Algometer
- Biofeedback Unit with facility EMG unit with integrated analysis software provided.
- Video Camera and software for movement analysis
- Desirable: Attachment to a center having Isokintic Unit, Motion Analysis Unit.
- Mobile physiotherapy Van

Neuro-physiotherapy Laboratory

- Hand Dynamometer
- 2 channel EMG with nerve-conduction testing facility
- Biofeedback unit with the facility to do quantitative analysis and therapy
- Sensory Integration kits
- Balance Boards
- Video Camera and software for movement analysis
- Desirable: Attachment to a center having Isokintic Unit, Motion Analysis Unit.
- Mobile physiotherapy Van

Cardio-Pulmonary Laboratory

- Ergometer (Treadmill/Bicycle with arm and leg Unit)
- Spirometer Portable
- Peak Flow meters.
- Mannequin for CPR Training
- Body Composition Analyser

Surk *B* *Pa* *DL* *PO*
28/4/22

Sports Physiotherapy Laboratory

- Manual Muscle Tester (Digital)
- Lactate Analyser
- Sports Timers
- Skinfold Caliper
- Fitness Measurement Instrumentation
- Video Camera and software for movement analysis
- Desirable: Attachment to a center having Isokinetic Unit, Motion Analysis Unit.
- First Aid Kit with Kinesio tapes.
- Access to a Sports Center/Gym
- Tie-Up with Sports teams

Obstetric & Gynae Physiotherapy Laboratory

- Well equipped exercise room with mats
- Sensory Integration kits
- Gym balls
- Vaginal Positioning devices
- Vaginal cones
- Biofeedback Unit
- Pelvic floor stimulator

Clinical facilities: The institution must provide in-house facility for clinical training of students as preferred choice. In the absence of this a Memorandum of Understanding with access to hands on clinical training should be made with speciality hospitals and institutions in each of the areas of Musculoskeletal/Trauma Unit, Neurology/Neurosurgery, Cardiopulmonary unit with intensive care facilities, Obstetric and Gynae unit, Sports Unit. In either case it is strongly recommended that each of the teaching unit should accommodate a maximum of six PG students only. The student to patient ratio in the hospital/institution should be 1:3.

Surv
K
Pa
DL
AD

Syllabus

For

Master of Physiotherapy

BRANCHES/SPECIALIZATION

- 1.(ORTHOPEDECS)
- 2.(NEUROLOGY)
- 3.(CARDIOPULMONARY)
- 4.(SPORTS)
5. (OBTETRICS & GYNAECOLOGY)



Atal Bihari Vajpayee Medical University Lucknow, U.P., India
SEMESTER SYSTEM FROM SESSION 2021-2022

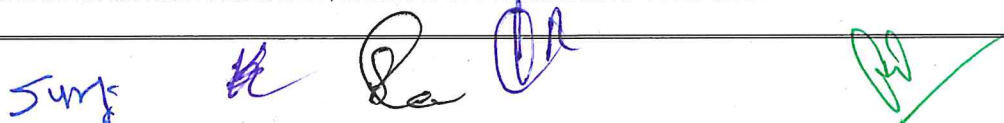
Suraj K Pa DR

COURSE STRUCTURE**FIRST SEMESTER**

Paper Code.	Title	Total Hours	Hours/week	Credits	IA Marks	SE Marks	Total Marks
MPT101	Basic Medical Sciences	50	4	4	25	75	100
MPT 102	General Bio-mechanics	50	4	4	25	75	100
MPT 103	Exercise Physiology	50	4	4	25	75	100
MPT 104	Research Methodology Biostatistics & Evidence Based Practice	50	4	4	25	75	100
MPT 102P	<i>Practical II</i> General Biomechanics	25	2	1	25	75	100
MPT 103P	<i>Practical III</i> Exercise Physiology	25	2	1	25	75	100
	Total	250	20	18	175	525	700
MPT 105	Clinics & Seminars Presentations	250	6	3	50	50	100
	Grand Total	500	26	21	225	575	800

SECOND SEMESTER

Paper Code.	Title	Total Hours	Hours/week	Credits	IA Marks	SE Marks	Total Marks
MPT201	Electrophysiology	50	4	4	25	75	100
MPT 202	Advances in Physiotherapy Assessment	50	4	4	25	75	100
MPT 203	Advances in Physiotherapy Techniques	50	4	4	25	75	100
MPT 204	Elective -1	50	4	4	25	75	100
MPT 201P	<i>Practical- I</i> Electrophysiology	25	2	1	25	75	100

Surf 

MPT 202P	Practical- II Advances in Physiotherapy Assessment	25	2	1	25	75	100
MPT 203P	Practical – III- Advances in Physiotherapy Techniques	50	2	1	25	75	100
	Total	300	22	19	175	525	700
MPT 205	Clinics & Seminars Presentations	250	6	3	50	50	100
	Grand Total	550	28	22	225	575	800

Electives I:

The student may choose from anyone options from the list of Program Elective combinations provided in the table below.

MPT 204O	Orthopaedic Disorders: Medical & Surgical Management	50	4	4	25	75	100
MPT 204N	Neurological Disorders: Medical & Surgical Management	50	4	4	25	75	100
MPT 204C	Cardio Pulmonary Disorders: Medical & Surgical Management	50	4	4	25	75	100
MPT 204S	Sports Disorders: Medical & Surgical Management	50	4	4	25	75	100
MPT 204G	Obstetrics & Gynaecological Disorders: Medical & Surgical Management	50	4	4	25	75	100

THIRD SEMESTER

Course No.	Title	Total Hours	Hour s/ week	Credits	IA Marks	SE Marks	Total Marks
MPT 301	General Principles of Pedagogy	50	4	4	25	75	100
MPT 302	Clinic Management & Administration	50	4	4	25	75	100
MPT 303	Elective-2	50	4	4	25	75	100

Handwritten signatures and initials in blue and green ink at the bottom of the page.

MPT 304	Elective-3	50	4	4	25	75	100
MPT 304P	<i>Practical- I Elective-3</i>	25	2	1	25	75	100
MPT 305P	Practical II Dissertation	25	2	1	25	150	200
Total		300	20	18	175	525	700
MPT 306	Clinics & Seminars Presentations	250	6	3	50	50	100
Grand Total		550	26	21	225	575	800

Elective 2: Program Elective

The student may choose from anyone options from the list of Program Elective combinations provided in the table below.

MPT 303O	Orthopaedic Biomechanics	50	4	4	25	75	100
MPT 303N	Neuro Biomechanics	50	4	4	25	75	100
MPT 303C	Cardio Pulmonary Biomechanics	50	4	4	25	75	100
MPT 303S	Sports Biomechanics	50	4	4	25	75	100
MPT 303G	Obs & Gyn Biomechanics	50	4	4	25	75	100

Elective-3 Program Elective

The student may choose from anyone options from the list of Program Elective combinations provided in the table below.

MPT 304O	Advances in Orthopaedic Physiotherapy Assessment & Management-I	50	4	4	25	75	100
MPT 304N	Advances in Neuro Physiotherapy Assessment & Management-I	50	4	4	25	75	100
MPT 304C	Advances in Cardio pulmonary Physiotherapy Assessment & Management-I	50	4	4	25	75	100
MPT 304S	Advances in Sports Physiotherapy Assessment	50	4	4	25	75	100

547

	& Management-I						
MPT 304G	Advances in Obs & Gynae Physiotherapy Assessment & Management-I	50	4	4	25	75	100

FOURTH SEMESTER

Course No.	Title	Total Hours	Hours/week	Credits	IA Marks	SE Marks	Total Marks
MPT 401	Teaching Methodology in Physiotherapy	50	4	4	25	75	100
MPT 402	Ethical Legal & Professional Issues	50	4	4	25	75	100
MPT 403	Elective-4	50	4	4	25	75	100
MPT 403P	<i>Practical- I Elective 4</i>	50	4	2	25	75	100
MPT 404P	Practical II Dissertation	100	4	2	25	150	200
Total		300	20	16	125	450	600
MPT 405	Clinics & Seminars Presentations	250	8	4	50	50	100
Grand Total		550	28	20	175	500	700

Elective-4 Program Elective

The student may choose from anyone option from the list of Program Elective combinations provided in the table below.

MPT 403O	Advances in Orthopaedic Physiotherapy Assessment & Management-II	50	4	4	25	75	100
MPT 403N	Advances in Neuro Physiotherapy Assessment & Management-II	50	4	4	25	75	100
MPT 403C	Advances in Cardio pulmonary Physiotherapy Assessment & Management-II	50	4	4	25	75	100

547

10

MASTERS OF PHYSIOTHERAPY PROGRAM-ORDINANCE-REGULATIONS-SYLLABUS 2021-22 ONWARDS

MPT 403S	Advances in Sports Physiotherapy Assessment & Management-II	50	4	4	25	75	100
MPT403 G	Advances in Obs & Gynae Physiotherapy Assessment & Management-II	50	4	4	25	75	100

Suf *SK* *Se* *DK*

SK

FIRST SEMESTER

Paper Code.	Title	Total Hours	Hours / week	Credits	IA Marks	SE Marks	Total Marks
MPT101	Basic Medical Sciences	50	2	4	25	75	100
MPT 102	General Bio-mechanics	50	2	4	25	75	100
MPT 103	Exercise Physiology	50	2	4	25	75	100
MPT 104	Research Methodology Biostatistics & Evidence Based Practice	50	2	4	25	75	100
MPT 102P	<i>Practical II</i> General Biomechanics	25	1	1	25	75	100
MPT 103P	<i>Practical III</i> Exercise Physiology	25	1	1	25	75	100
	Total	250	10	18	175	525	700
MPT 105	Clinics & Seminars Presentations	250	6	6	50	50	100
	Grand Total	500	16	24	225	575	800

COURSE WISE LEARNING OBJECTIVE, AND COURSE OUTCOMES (COs)**PAPER 101 - BASIC MEDICAL SCIENCE**

Course Description: The course covers topics related to basic medical sciences with review of Anatomy and physiology.

Course Objective: The course should enable the student to develop a concept about different basic medical sciences and their application in various fields.

Course Outcome: The Students will be able to use this basic medical sciences knowledge in assessment and investigation of various diseases and disorders.

ANATOMY AND PHYSIOLOGY

- Micro structure for various soft tissue structures like Ligaments, Tendon, Muscle, bone, cartilage, articular cartilage tendon and disc. Ossification of various bones.
- Review of Musculoskeletal anatomy
- Review of Neuro Anatomy
- Review of Cardiovascular Anatomy

Surf [Signature] [Signature] [Signature] [Signature]

[Signature]

- Review of Joints and Its Classification
- Review of Muscle Physiology, Contraction of skeletal muscle.
- Effects of ageing and disuse.

PHARMACOLOGY AND RADIOLOGY

- NSAIDS & Opioids
- DMRD'S
- Muscle Relaxant
- Chemotherapy and Antibiotics
- Nutritional supplements

Basics of Imaging Techniques

- X-rays
- Ultrasonography
- CT Scan
- MRI scanning
- Bone Scan
- DEXA Scan
- Arthroscopy

PAPER 102 - GENERAL BIOMECHANICS

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

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

Course Outcome: On completion of the study of this Course the student should be able to identify and apply the principles of biomechanics and kinesiology in understanding the normal functioning of the human body.

HISTORY OF BIOMECHANICS -Introduction to classical mechanics, Structural Versus Mechanical Properties, Types of Mechanical Tests- Uniaxial tensile test, Compression tests, Shear tests, Bending tests, Categorization of Material Deformations- Elastic deformation, Plastic deformation, Viscoelasticity- Strain rate, Stress relaxation, Creep, Hysteresis, Load, Elongation, Viscoelastic Experiments-Ultimate load, Ultimate elongation, Stiffness, Engineering stress, Cauchy stress, Engineering strain, Ultimate tensile strength, Ultimate tensile strain, Tangent modulus

COMPUTATIONAL MODELING: Advantages and disadvantages

MOVEMENT PATTERNS – the essence of biomechanics: Introduction, Defining human movements, Some fundamental movements, Movement patterns, Comparison of qualitative and quantitative movement analysis, Summary, Study tasks, important terms.

Sup B Pa Or

PO

QUALITATIVE ANALYSIS OF BODY MOVEMENTS: Introduction, A structured analysis framework, Preparation stage – knowing what and how to observe, Observation stage – observing reliably Evaluation and diagnosis stage – analysing what's right and wrong in a movement, Intervention stage – providing appropriate feedback, Identifying critical features of a movement.

THE GEOMETRY OF MOTION: Introduction, Movement patterns revisited, Fundamentals of movement Linear motion and the centre of mass, The geometry of angular motion, The coordination of joint rotations.

QUANTITATIVE ANALYSIS OF MOVEMENT: Introduction, The use of videography in recording body movements, Recording the movement, Experimental procedures, Data processing, Projectile motion, Linear velocities and accelerations caused by rotation, Rotation in three-dimensional space.

CAUSES OF MOVEMENT – FORCES AND TORQUES: Introduction, Forces in movements, Combinations of forces on the performer, Momentum and the laws of linear motion, Force–time graphs as movement patterns, Determination of the centre of mass of the human body, Fundamentals of angular kinetics, Generation and control of angular momentum, Measurement of force, Measurement of pressure.

ELECTROMYOGRAPHY – WHAT MUSCLES DO: Experimental procedures in electromyography, EMG data processing and interpretation.

ISOKINETIC DYNAMOMETRY- Basic procedures, principles, testing of various muscle groups.

MUSCLE MECHANICS

Structure & composition of muscle Fiber length & cross section area Mechanical properties EMG changes during fatigue & contraction. Changes in mechanical properties because of aging and exercised & immobilization Clinical applications. Positive and Negative work of muscle, mechanical power, Causes of inefficient movement Co-contraction Isometric contraction Energy generation at one joint and absorption at another Energy flow, Energy storage.

LIGAMENT & TENDON MECHANICS

Structure and composition Mechanical properties Cross sectional area measurements Muscle tendon properties Temperature sensitivity Changes in mechanical properties because of aging exercise and immobilization Mechanoreceptors Clinical applications

GAIT

Gait parameter Kinetics Kinematic Time- Space determinants Pathological gait, Biomechanics of Stair climbing Changes in gait following various surgeries/ diseases/ disorders

ORTHOSIS & PROSTHESIS

Handwritten signatures and dates at the bottom of the page, including a date '29/4/22'.

Orthosis of spine Orthosis of upper limb Orthosis of lower limb Prescriptions checkouts & proper fittings Bio-mechanical principles governing them Aids used in management of disability.

PAPER 103 EXERCISE PHYSIOLOGY

Course description: This course aims to deliver knowledge on scientifically based standards on exercise and its effects on various systems of the body. It prepares students through the process of selecting and administering therapeutic exercises using exercise guidelines to interpret results, and drafting an physiotherapy interventional prescription that is in line with exercise guidelines parameters.

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

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

Energy Transfer for Physical Activity:

- a. Energy transfer in Body.
- b. Energy transfer in exercise.
- c. Energy expenditure during various activities.
- d. Fatigue.
- e. Biochemical responses to endurance training.

Exercise and cell biology - effect of exercise on various cell activities, adaptation of organelles with exercise, exercise and aging-physiology changes of aging

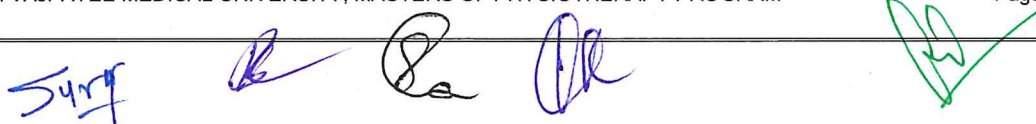
Exercise and Respiratory System:

- a. Second Wind.
- b. Oxygen Debt.
- c. Breath Holding, High Pressure Ventilation. Scuba Diving.
- d. Regulation of Respiration during exercise.

Skeletal System:

- a. Growth and Exercise.
- b. Repair and adaptation during exercise. Delayed Onset Muscle Soreness (DOMS)
- c. Exercise prescription for chronic low back pain
- d. Training for Muscular Strength and Endurance.
- e. Muscle fibre typing and significance.

Exercise and nervous system - neural adaptation with exercises, cerebral perfusion and exercises, exercise for mood enhancement and anxiety.



Exercise and cardiovascular system:

- a. Athletes Heart.
- b. Cardio Vascular adaptations to sustained aerobic exercises.
- c. Lipids and sports, protection from coronary heart disease, exercise and optimization of lipid profile.
- d. Sudden cardiac death in sports. Regulation of circulation during exercise. Exercise and vascular system-cardiovascular adaptation to sustained aerobic exercises, exercise and optimization of lipid profile, regulation of circulation during exercise

Gastrointestinal Tract and Endocrine system:

- a. Effect of exercise on GIT and Liver.
- b. Hormone regulation of fluid and electrolytes during exercise.
- c. Exercise and Menstrual Cycle.
- d. Stress Hormones in Exercise.

Exercise and endocrine system-

Hormonal regulation of fluid and electrolytes during exercise and menstrual cycle, stress hormone in various activities, effect of exercise on various hormones in exercise, effect of exercise on GIT and liver, Opioids, Runners High. exercise addiction.

Diabetes and Exercise

- a. Exercise in diabetic patients
- b. Exercise as a method of control of diabetes

Exercises for special categories

- a. Child and adolescent athlete's problems
- b. Special problems of older athletes
- c. Special concerns for differently abled athletes

Female Specific Problems:

1. Sports Amenorrhoea.
2. Injury to female reproductive tract.
3. Menstrual Synchrony.
4. Sex determination.
5. Exercise and pregnancy.
6. Eating disorders in athletes.

Rheumatology & Geriatric Disorder:

1. Rheumatoid arthritis, SLE and Juvenile Rheumatoid Arthritis.
2. Ankylosing Spondylitis.
3. Osteoarthritis and other geriatric conditions.
4. Cost and benefits of exercise prescription in Osteoporosis.

Obesity and related problems

Surf [Signature] [Signature] [Signature] [Signature]

[Signature]

- a. Dietary recommendation for healthy individuals.
- b. Obesity – epidemiology, classification of causes, complications and treatment.
- c. Paediatric obesity- Regulation of food consumption, complications and prevention.

Stress Management

- a. Introduction i. The history and definition of "stress" ii. The characteristics of stressors iii. Clinical implications of stress iv. Coping with stress – styles of coping, recruiting resources for coping
- b. Self management
- c. Tools for stress management

Hazards of Smoking

- a. The physiological, psychological and behavioral impact of cigarette smoking
- b. Evidence based possibilities for treatment
- c. Treatment for smoking cessation

Sleep Medicine

- a. Acquaintance with basic concepts in sleep medicine, the structure and physiology of sleep
- b. Classification of sleep disorders
- c. Clinical implications of sleep disturbance
- d. Physiotherapeutic measures for sleep deprivation

Yoga

- a. Important Pranayamas and strengthening and rejuvenating asanas.
- b. Methods, advantages and contraindications.

MPT 104- RESEARCH METHODOLOGY, BIOSTATISTICS & EVIDENCE BASED PRACTICE

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

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

Course Outcome: On completion of the study of this course the student should be able to understand the methods of research process and design so as to effectively plan a research.

To understand the statistical measures used in the analysis and interpretation of research data.

To acquire skills of critically reviewing the literature.

SECTION – 1 RESEARCH METHODOLOGY

Suraj *De* *Pa* *DS*

Handwritten signature

Research in physiotherapy : Introduction, Research for Physiotherapist: Why? How? When? , Research – Definition, concept, purpose, approaches, Internet sites for Physiotherapists.

Research fundamentals: Define measurement, Measurement framework, Scales of measurement, Pilot Study, Types of variables, Reliability & Validity, Drawing Tables, Graphs, Master chart

Writing a research proposal: Defining a problem, Review of Literature, Formulating a question, Operational Definition, Inclusion & Exclusion criteria, Methodology- Forming groups Data collection & method for analysis, Informed Consent Steps of documentation – Title to Scope of study

Research ethics: Importance of Ethics in Research, Main ethical issues in human subjects" research, Main ethical principles that govern research with human subjects, Components of an ethically valid informed consent for research.

Overview of study designs: Observational, Descriptive-Case study/ series, Cross sectional, Normative, Correlational, Analytical; case control, cohort, Experimental- True & quasi experimental

Sampling: Random and non-random sampling, Various methods of sampling – simple random, stratified, systematic, cluster and multistage. Sampling and non-sampling errors and methods of minimizing these errors.

Plagiarism: Definition of Plagiarism, types, Avoiding plagiarism , software methods to detect plagiarism.

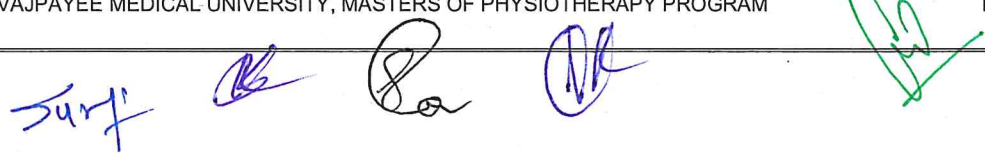
Evidence Based Practice: Introduction to evidence– based complementary medicine. Evidence–based health care, Evidence–based practices, Evidence–based decision making and management, Types of evidence: Definition of evidence, Forms of evidence : Case–control studies, Cohort studies, Randomized controlled trials, Systematic Reviews, Importance of Hierarchy of Evidence

Key element of scientific writing: Structure, formulation and implementation of thesis, Structure, formulation and implementation of original research report ,Structure, formulation and implementation of systematic review/meta –analysis, How to read and critique research, Review of an indexed refereed research paper, - Evaluating paper scientific merit, Providing constructive feedback to the author, typical review formats for reviewing a paper ,Reasons for rejection.

Presenting Research: Writing and submitting papers, Strategies of paper writing, Design of paper writing, Tactics of paper writing - Where to publish

SECTION – II BIostatISTICS

Introduction: Descriptive and Inferential statistics, Types of data: Qualitative and Quantitative, Parametric and Non- Parametric tests, Which tests to use.



Tests of significance: Basics of testing of hypothesis – Null and alternate hypothesis, type I and type II errors, level of significance and power of the test, p value. Tests of significance (parametric) - t – test (paired and unpaired), Chi square test and test of proportion, one way analysis of variance. Repeated measures analysis of variance. Tests of significance (non-parametric)-Mann-Whitney u test, Wilcoxon test, e. Kruskal-Wallis analysis of variance. Friedman's analysis of variance.

Correlation and regression: Simple correlation – Pearson's and Spearman's; testing the significance of correlation coefficient, linear and multiple regressions. Interpretation of r.

Basic probability distributions and sampling Distributions: Concept of probability and probability distribution. Normal, Poisson and Binomial distributions, parameters and application. Concept of sampling distributions, Standard error and confidence intervals, Skewness and Kurtosis

Graphical Presentation: Frequency distributions, Describing data with Graphs, Describing data with Averages Mode Median Mean, Describing variability Variance, Standard deviation, etc. Normal Distributions

Role of Computers in Research: Basic of computers – Hardware and Software, Basic of Computer Applications – Windows, MS word, Power Point, etc., Simple statistical Analysis using SPSS software., Tabulation, Calculation of central tendency and dispersion, Using software packages, Analysis, Presentation of data in diagrammatic & Graphic form, Artificial Intelligence and its application in physiotherapy Robotics and its application in physiotherapy, Information technology and its application in physiotherapy.

MPT 102P GENERAL BIOMECHANICS

This involves application of topics in PAPER MPT 102 via demonstrations, field visits and case presentations.


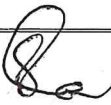

MPT 103P EXERCISE PHYSIOLOGY

The student will undergo laboratory and on-field training in Exercise physiology.

MPT 105 CLINICS & SEMINARS

These will serve as a platform for students to integrate various components of patient management. Students will give presentations on topics provided to them.

Students will engage in clinical Physiotherapy Department to enhance their clinical skills and apply theoretical knowledge gained during teaching sessions.

Surj   



SECOND SEMESTER

Paper Code.	Title	Total Hours	Hour s/w eek	Cred its	IA Mar ks	SE Mark s	To tal Ma rks
MPT201	Electrophysiology	50	2	4	25	75	100
MPT 202	Advances in Physiotherapy Assessment	50	2	4	25	75	100
MPT 203	Advances in Physiotherapy Techniques	50	2	4	25	75	100
MPT 204	Elective -1	50	2	4	25	75	100
MPT 201P	<i>Practical- I</i> Electrophysiology	25	1	1	25	75	100
MPT 202P	<i>Practical- II</i> Advances in Physiotherapy Assessment	25	1	1	25	75	100
MPT 203P	<i>Practical – III-</i> Advances in Physiotherapy Techniques	50	2	2	25	75	100
	Total	300	12	20	175	525	700
MPT 204	Clinics & Seminars Presentations	250	6	6	50	50	100
	Grand Total	550	18	26	225	575	800

Electives I:

MPT 204O	Orthopaedic Disorders: Medical & Surgical Management	50	2	4	25	75	100
MPT 204N	Neurological Disorders: Medical & Surgical Management	50	2	4	25	75	100
MPT 204C	Cardio Pulmonary Disorders: Medical & Surgical Management	50	2	4	25	75	100
MPT 204S	Sports Disorders: Medical & Surgical Management	50	2	4	25	75	100
MPT 204G	Obstetrics & Gynaecological Disorders: Medical & Surgical Management	50	2	4	25	75	100

PAPER MPT 201 ELECTROPHYSIOLOGY

Course description: This course aims to deliver scientifically based standards on electrodiagnostic testing. It prepares students through the process of selecting and administering electrodiagnostic tests and electrotherapeutic agents, using guidelines to interpret results, and drafting an physiotherapy interventional prescription that is in line with guidelines and parameters.

Course Objective: This course should deliver the concepts in electrophysiology and prepare students to test and prescribe suitable electrodiagnostic tests and electrotherapeutic agents to different groups of the population and conditions.

Course Outcome: On completion of the study of this course the student should be able to select and administer electrodiagnostic tests, interpret results, and drafting a therapeutic plan and prescribe electrotherapeutic agents. The student shall learn the knowledge and skills on various electrotherapeutic agents, advanced techniques and physiological responses of nerve and muscle in diagnostic and therapeutic electro-agents.

Diagnostic Electrophysiology

1. Anatomy and Physiology of: Motor unit, action potential, excitability of nerve and muscle, neuromuscular junction.
2. Technique of nerve conduction velocity and electromyography: Instrument, techniques, interpretations in terms of neuromuscular function and bio-feedback technique.
3. Nerve conduction studies, normal/abnormal nerve conduction, its relevance in muscle function.
4. Concepts of normal & abnormal EMG studies.
5. Late responses

7. Concepts of electro physiological studies in neuro muscular diseases as a diagnostic and therapeutic tool.
8. Electrical stimulation and its effects on various systems.
9. Evoked potentials – VEP, SSEP, MEP, BAEP

Therapeutic Electrophysiology

Physiological mechanism of action of electrotherapeutic modalities,

Critical Analysis of Electrotherapeutic Modalities-

1. IFT,
2. TENS,
3. MS,
4. SWD,
5. LASER,
6. MWD,
7. Pulsed SWD,
8. Mechanical Traction etc.

Plasticity in response to Electrical stimulation.

MPT 202 ADVANCES IN PHYSIOTHERAPY ASSESSMENT

Course Description: The course covers topics related to physiotherapy assessment, clinical diagnostic procedure, interpretation, measurement in diagnosing different disorders with physical dysfunction perspective.

Course Objective: The course should equip the student to acquire in-depth knowledge in different physiotherapy assessment and measurement procedures in different disorders.

Course outcome: The student should be able to:

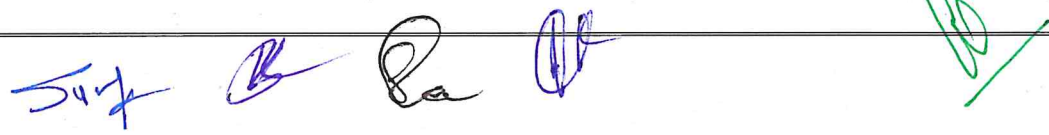
1. To perform a comprehensive and complete Physiotherapy assessment of various patients.
2. To document systematic, meaningful, accurate written records of the patient.

BASIC CONCEPT OF PHYSIOTHERAPY ASSESSMENT

- Examination, Assessment, Evaluation, Functional assessment, Diagnosis, PT diagnosis
- Prognosis, Intervention, Outcome measures, Reassessment
- Physical impression or problem of list on the basis of ICF model.
- POMR and SOAP Notes, Documentation

DIAGNOSTIC PROCEDURE AND INTERPRETATION

- Laboratory study, Imaging study
- Electrodiagnosis
- Diagnostic findings and correlation with physical findings

Surj B Sa 

EXAMINATION OF THE UPPER QUADRANT:

- The subject will include musculoskeletal examination, involving the shoulder, elbow, wrist and hand (Traumatic Non traumatic)
- Neurological and Functional Screening
- Classes will include lecture, laboratory and clinical experiences

EXAMINATION OF LOWER QUADRANT:

- The subject will include musculoskeletal examination, involving the Hip, Knee, ankle and foot (Traumatic Non traumatic)
- Neurological and Functional Screening
- Classes will include lecture, laboratory and clinical experiences

EXAMINATION OF PELVIC AND SPINE:

- The subject will include musculoskeletal examination, Cervical , Thoraco lumbar, Lumbo sacral and Pelvis (Traumatic Non traumatic)
- Neurological and Functional Screening
- Classes will include lecture, laboratory and clinical experiences .

PAIN AND MUSCLE PERFORMANCE ASSESSMENT

Pain Physiology, Theories of pain, Pain pathways, Causes of clinical pain, Sensitization, Plasticity, Pain analysis.

Muscle Power, Muscle Strength and Muscle endurance assessment

Muscle flexibility assessment

MEASUREMENT SCALES:

Scales used for Musculoskeletal Examination:VAS, NPRS, DASH, SPADI, WOMAC, Michigan Hand Outcome Questionnaire, Arthritis Impact Measure, NDI and others.

Scales used for Neurological examination: ASWORTH, BERG BALANCE Scale, MMSE, SCI Scales, GCS and others. Infant neural developmental scale, MOPS, Multiple sclerosis impact scale, Berg balance, Ashworth, Barthel index, Glasgow coma, MMS and other reliable and valid neurological scale, Scales used in Parkinsonism, Vertigo, Illingworth scale, MAS, HAAD, GPS.

Scales used for Cardio Physiotherapy examination:

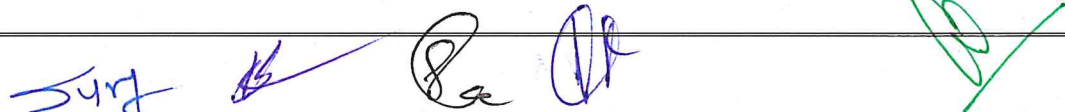
Scales used for Sports Injury assessment.

Functional scale of upper limb and lower limb.

Conversion of Scales in vernacular languages.

DISABILITY EVALUATION. Disablement and Enablement Concepts for Physiotherapy Research and Practice, Traditional model, Consequences of disease model, NAGI model. International Classification of Impairments Disability and Handicap Model (ICIDH – 1), International Classification of Functioning, Disability and Health (ICF / ICIDH - 2), ICF Coding, History and development of the ICF, The ICF and the WHO family of international classifications, Components of the ICF, ICF coding, Benefits of Using ICF

MPT 203 ADVANCES IN PHYSIOTHERAPY TECHNIQUES



Course Description:

The course covers topics on various school of thoughts of joint, muscle and neural tissue manual therapy techniques and physiotherapy intervention in various types of disorders. The course aims to provide a more functional and comprehensive approach based on physiotherapy techniques to manage a range of conditions. Emphasis will be made on clinical decision making and integrating manual therapy skills within the overall plan of care for the patient. Class will include lecture, laboratory and clinical experiences.

Course Objective: The course should enable the student to acquire in-depth understanding and skill in managing various clinical conditions by using various types of physiotherapeutic and allied health techniques.

Course Outcome: The student should be able to compare & contrast the outcome of various physiotherapy approaches.

Therapeutic Exercise

Principles Types of following exercises with reference to their therapeutic effects, indications and contraindications and the specific uses, Dosimetry in specific disorders and traumatic condition

- Isometric,Isotonic,Isokinetic
- Concentric,Eccentric
- CKC,OKC
- Flexibility,ROM exercises Proprioceptive,Postural exercises

Manual Therapy techniques

Principles Types of manual therapy with reference to their therapeutic effects, indications and contraindications and the specific uses, Dosimetry in specific disorders and traumatic condition.

Manipulation and Mobilization Techniques

Principles of various schools of thought in manual therapy –Definition – Mobilization, Manipulation, indications, limitations, contraindications and precautions, applications of Mobilization technique to various joints. Principles of Maitland, Mulligan and McKenzie, Kaltenborn, Cyriax joint mobilization and manipulation techniques. Pilates-school of thought, Chiropractic school of thought, Osteopathic school of thought.

Soft tissue techniques

- a) Butler
- b) Positional release
- c) MET
- d) Myofascial release

Stretching

1. Concept &Types
2. Advantages & disadvantages

Handwritten signatures and dates:
Sury, [Signature], [Signature], [Signature], [Signature], 28/4/22.

3. Various techniques
4. Muscle specific technique

Soft Tissue Mobilization

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

Taping Techniques

Kinesio-taping and Rigid Taping techniques in Orthopaedic, Neurologic, Cardiothoracic, Sports and Obs & Gynae Conditions

Dry Needling: Concept, Physiological action, indications & contraindications, methods.

Cupping Therapy: Concept, Physiological action, indications & contraindications, methods.

TREATMENT INSTRUMENTS

Therapeutic modalities

Dosimetry in specific disorders and traumatic condition

- Superficial and deep heat therapy
- Low high and medium frequency currents
- SWD and MWD
- Cryotherapy
- Pneumatic compression devices
- LASER
- Shockwave Therapy
- Recent advancement in therapeutic modalities

SPECIAL AND INTEGRATED TECHNIQUES

Special and integrated techniques use in physiotherapy

Philosophy, Techniques, Indications, Contraindications, Selection, Muscle activation and special considerations in the following types of Women Fitness regimes

1. Aerobic fitness exercises: Outdoor aerobic exercises-walking, cycling, running, jogging, biking, hiking, skiing, nordic walking, skateboarding. Indoor Aerobic exercises-swimming, dancing, water aerobics, dance aerobics, low-impact dance classes, climbing steps, kick-boxing, cardio workout machines (treadmill, elliptical, bike, rower, x-c skiing, stair-climber), skipping rope.
2. Circuit training: Upper-body-Push ups, Bench dips, Back extensions, Medicine ball chest pass, Bench press, Inclined press up. Core & trunk-Sit ups (lower abdominal), Stomach crunch (upper abdominal), Back extension chest raise. Lower-body- Squat jumps, Compass jumps, Astride jumps, Step ups, Shuttle runs, Hopping shuttles, Bench squats. Total-body-Burpees, Treadmills, Squat thrusts, Skipping, Jogging.



3. Strength training: Bodyweight exercises/Calisthenics, Equipment based strength training- barbells, dumbbells, weight machines and other exercise machines, weighted clothing, resistance bands, gymnastics apparatus, Swiss balls, indian clubs, pneumatic exercise equipment, hydraulic exercise equipment.

4. Core exercises: Sit Ups With Towel, Hip Lifts, Flutter Kicks, Scissor Kicks, V-sits, V-ups, Leg Lifts, Hollow Body Hold, Hip Dips, Toe Touches, Plank, Side-plank, Deadbug, Vertical Leg Crunch, Plank Rolls, Reverse Crunch, Glute Bridge March, Inchworm, Bird Dog, Cat Camel, Bear Crawl.

5. Swiss Ball/Stability Ball/Gym Ball exercises: swiss ball hamstring curl, swiss ball single leg glute rais, swiss ball hamstring floor tap, swiss ball squat, swiss ball preacher curl, swiss ball chest press locomotive, swiss ball seated shoulder press, swiss ball push up, swiss ball pike, swiss ball v-up, swiss ball ab rollout, swiss ball bicycles, swiss ball stir the pot, swiss ball mountain climber, swiss ball sprinter, swiss ball crunch, swiss ball reverse crunch, swiss ball lateral crunch, swiss ball crunch twist, swiss ball pec squeeze, swiss ball incline plank, swiss ball side plank, swiss ball russian twist, swiss ball jackknife, swiss ball scorpions.

6. Balance training: Stand on one leg, Lateral thigh lift, Single-leg squat, Catch and hold, Tree Pose, High Lunge, Warrior III, Balancing half moon, Tightrope walk, Rock the boat, Flamingo stand, Heel-toe walking.

7. Yoga: Safe Yoga Asanas for prenatal and post natal period, pranayamas, precautions while performing yoga.

8. Meditation: Physiological effect of meditation, Technique of Meditation, Different types of meditation.

9. Flexibility and stretching: use of physiotherapeutic stretching techniques in prenatal and post natal period, indications, contraindications.

10. Pilates: Breathing, Shoulder bridge preparation, Leg lifts, Toe taps, Single leg stretch, One leg circle, Side bend preparation, Sidekick, Side leg lifts, Swan dive, Swimming preparation, Leg pull front prep (hovers), Leg pull front prep (hovers), Crisscross, Plank.

PAPER-204 ELECTIVE-1

MPT 204O	Orthopaedic Disorders: Medical & Surgical Management	50	2	4	25	75	100
MPT 204N	Neurological Disorders: Medical & Surgical Management	50	2	4	25	75	100
MPT 204C	Cardio Pulmonary Disorders: Medical & Surgical Management	50	2	4	25	75	100

MPT 204S	Sports Disorders: Medical & Surgical Management	50	2	4	25	75	100
MPT 204G	Obstetrics & Gynaecological Disorders: Medical & Surgical Management	50	2	4	25	75	100

FOR MPT (ORTHO) STUDENTS

MPT 204O

ORTHOPAEDIC DISORDERS: MEDICAL & SURGICAL MANAGEMENT

Course Description: The course covers topics related to etiology, clinical manifestation, medical and surgical management of orthopaedic disorders & trauma.

Course Objective: The course should enable the student to develop a detailed concept about different orthopaedic disorders and its medical and surgical management.

Course Outcome: The Students will be able to use this information in planning and tailoring effective, specific, safe Physiotherapy treatment programmes

GENERAL ORTHOPAEDICS

- Metabolic Disorders of the Bone and Joints.
- Infections of the Bone and Joints.
- Congenital Disorders of the Bone and Joints.
- Inflammatory Disorders of the Bone and Joints.
- Myopathies.
- Neurological Disorders.
- Bone and Joint Tumours.
- Complex Regional Pain Syndromes.

REGIONAL ORTHOPAEDICS

- Disorders of Upper Limb
- Disorders of Lower Limb
- Disorders of the Spine

TRAUMATOLOGY

- Trauma of the Upper Limb
- Trauma of the Lower Limb
- Trauma of the Spine
- Trauma of the Peripheral Nerves

MISCELLANEOUS:

- Myopathies
- Amputation

FOR MPT (NEURO) STUDENTS

Handwritten signatures and initials in blue and green ink at the bottom of the page.

MPT 204N – NEUROLOGICAL DISORDERS: MEDICAL & SURGICAL MANAGEMENT

Course Description: The course covers topics related to etiology, clinical manifestation, medical and surgical management of neurological diseases, disorders.

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

Course Outcome: The Students will be able to use this information in planning and tailoring effective, specific, safe Physiotherapy treatment programmes.

APPROACH TO SIGNS AND SYMPTOMS

- a) The neurologic history and examination b) Dizziness
- c) Paresthasias d) Pain, Headache

NEUROVASCULAR DISORDERS

- a) Stroke, Stroke in pregnancy (including pre-eclampsia and eclampsia)
- b) Arteriovenous malformations
- c) Spinal cord disease and stroke

Dementia and amnesic disorders

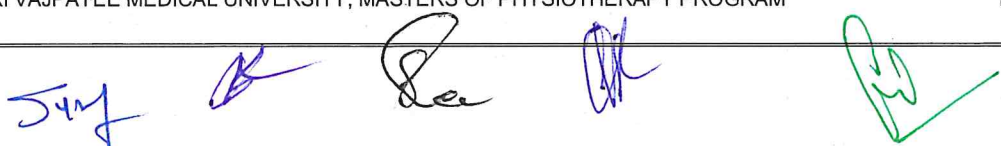
- a. Alzheimer's disease, Overview of dementia (epidemiology, differential diagnosis, diagnostic testing),
- b) Multi-infarct dementia and Subcortical dementias,
- c) Transient global amnesia and other amnesic disorders

Movement disorders

- a) Parkinson's disease, Parkinson plus syndromes
- b) Dystonia, Choreoathetosis, Tremors and Hemibalissmus
- c) Ataxia
- d) Multiple sclerosis and other demyelinating diseases

Trauma

- a) Traumatic brain injury.
- b) Subdural and epidural hematomas.
- c) Traumatic spinal cord injury.



Epilepsy

- a) Etiology, types and manifestations.
- b) Status epilepticus and treatment.

Infectious disorders

- a) Meningitis b) Encephalitis
- b) Brain abscess
- d) Transverse myelitis
- e) TBM
- f) Poliomyelitis & PPRP

Neuromuscular disorders

- a) Myasthenia gravis
- b) Motor neuron diseases

Peripheral neuropathies & Cranial neuropathies

- a) Guillain-Barre syndrome & other acute neuropathies
- b) Diabetic neuropathies
- c) Mononeuritis Multiplex
- d) Mononeuropathies and plexopathies (Brachial and Lumbar)
- e) Bell's palsy and other involvements of facial nerve

Developmental disorders

- a) Spina bifida b) Chiari malformation
- c) Hydrocephalus
- d) CP
- e) Autistic disorders; ADHD.

Hereditary disorders

Disorders of Peripheral Nerves

Disorders of Muscle

Cerebellar disorders



Disorders of the Vestibular system

Extrapyramidal disorders

NEURO SURGERY

Surgical Management indications, contra-indications for surgery, precautions after Surgery. Also included:

- General Principles of neurosurgery
- Tumours
- Intracranial abscess
- Hydrocephalus
- Stereotactic surgery
- Cerebral Malformations
- Operations on the discs-cervical Or Lumbar disc operation
- Malformation of the spine and spinal cord
- Lumbar and cisternal puncture technique and complications
- Peripheral nerve surgery
- ICU Management of the neurologically impaired patients

RADIOLOGY

Basics of Imaging and laboratory Techniques in Neurological conditions

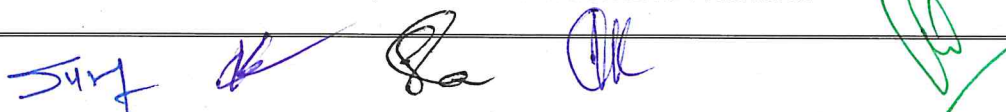
1. Lumbar puncture
2. EMG and NCV
3. Electroencephalography
4. C.T, MRI and PET
5. Evoked Potentials
6. Nerve and muscle biopsy

FOR MPT (CARDIO) STUDENTS

MPT 204C CARDIOPULMONARY DISORDERS: MEDICAL & SURGICAL MANAGEMENT

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

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

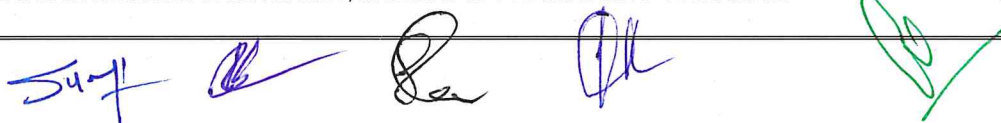


Course Outcome: The Students will be able to use this information in planning and tailoring effective, specific, safe Physiotherapy treatment programmes.

CARDIOVASCULAR DISORDERS

- Coronary Artery Disease: Acute Coronary Syndromes, Angina Pectoris, Coronary artery vasospasm, Myocardial Infarction, complications of Myocardial infarction
- Hypertensive heart disease
- Cardiac arrest
- Myocardial disease and cardiomyopathies: cardiac cirrhosis, cardiogenic shock, cardiomyopathy (Alcoholic, cocaine, dilated, hypertrophic, peripartum, restrictive), cor pulmonale, heart failure, myocarditis
- Pericardial disease: cardiac tamponade pericardial effusion, pericarditis (Acute, constrictive, constrictive-effusive)
- Rheumatic heart disease
- Infective endocarditis
- Valvular Heart disease: Aortic Regurgitation, Aortic stenosis, mitral stenosis, mitral valve prolapse, pulmonic regurgitation, pulmonic stenosis, tricuspid atresia, tricuspid regurgitation, tricuspid stenosis.
- Congenital Heart disease: Aortic Coarctation, Atrial septal defect, Ebstein anomaly, Eisenmenger syndrome, patent ductus arteriosus, patent foramen ovale, tetralogy of Fallot, ventricular septal defect
- Peripheral vascular disease: Aortic dissection, aortitis, deep vein thrombosis, subclavian artery thrombosis, subclavian vein thrombosis, varicose veins, thrombophlebitis, Raynaud's phenomenon, chronic venous insufficiency, Buerger's disease (thromboangiitis obliterans), atherosclerosis, thoracic aortic aneurysm
- Heart disease in pregnancy (a) Pre-existing cardiovascular conditions-congenital heart disease-Atrial septal defect (ASD) and ventricular septal defects (VSD) and patent ductus arteriosus (PDA), valve disease, arrhythmias, aortic disease (b) cardiovascular diseases that may develop during pregnancy, peripartum cardiomyopathy, hypertension, heart murmur.
- Cardiac tumors

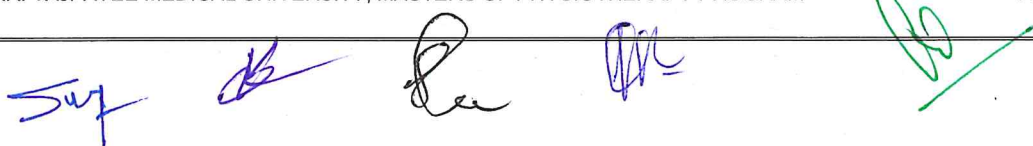
Pulmonary disorders



- Obstructive lung disease: chronic bronchitis, emphysema, asthma, bronchiectasis, bronchiolitis, chronic obstructive pulmonary disease
- Neuromuscular and skeletal disorders leading to global hypoventilation
- Infectious conditions of the lungs: Tuberculosis (TB), severe acute respiratory syndrome (SARS), lung abscess, pneumonia (bacterial, fungal, viral), upper respiratory tract infection, ventilator-associated pneumonia
- Interstitial and infiltrative pulmonary disease: Sarcoidosis, pulmonary fibrosis, silicosis, berylliosis, hypersensitivity pneumonitis-reaction from inhaling animal proteins; interstitial lung fibrosis
- Occupational lung disease: asbestosis, chemical worker's lung, coal worker's pneumoconiosis, farmer's lung, silicosis, silo filler's disease, tobacco worker's lung
- Pulmonary hypertension (primary, secondary)
- Diseases of pleura: empyema, pleural effusion, pneumothorax, pleurisy (pleural inflammation)
- Atelectasis
- Respiratory failure (types I and II)
- Pulmonary embolism
- Pulmonary tumors
- Sleep apnoea

Diseases of newborns and children

- Risk factors for the neonate: related to the mother, related to the mother, related to pregnancy, related to labor and delivery
- Transient tachypnea of the newborn
- Acute respiratory distress syndrome
- Bronchopulmonary dysplasia
- Sudden infant death syndrome



- Neuromuscular diseases
- Assessment of the neonates and children: vital signs, physical assessment, complete blood counts, electrolytes, arterial blood gases, transcutaneous blood gases, chest x-rays and transillumination, APGAR scoring, new Ballard Scoring, Silverman scoring, pneumographs, pulmonary functions

Cardiovascular surgeries- pre and post operative assessment and management.

- Haemodynamic performance of CTVS patients
- AV shunts
- Procedures on sternum, chest wall, diaphragm, mediastinum, esophagus
- Cardiopulmonary bypass
- CTVS procedures: Outline & definition of procedures, differences in open & close heart surgery, recent advance like MIDCAB, OPCAB, heart port
- Incisions
- Extracorporeal circulation techniques
- Cardiopulmonary bypass & OPCAB
- Vascular surgeries (Aortic dissection, subclavian artery thrombosis, subclavian vein thrombosis, thoracic aortic aneurysm)
- Emergencies in CTVS
- Trauma- blunt chest trauma, esophageal rupture, hemothorax, penetrating chest trauma, pneumothorax, ventricular assist devices
- Heart transplant
- Complications of cardiac surgery (thrombo-embolism in brain, lungs, and distal vessels, phrenic nerve injuries, unstable sternum & implication of procedures like omentoplasty etc)
- Lung surgeries (Wedge Resection, lobectomy, pneumonectomy, video-assisted thoracic surgery)

RADIOLOGY

Basics of Imaging Techniques in Cardiopulmonary conditions

1. Ultrasonography 2. X-rays 3. CT Scan

Handwritten signatures and initials in blue and green ink at the bottom of the page.

4. MRI scanning 5. Bone Scan 6. DEXA Scan 7. 2-D Echocardiography 8. 12 Lead ECG
9. TMT 10. Angiogram. 11. ESR 12. CBP 13. Plethysmography.

FOR MPT (SPORTS) STUDENTS

MPT 204S- SPORTS DISORDERS: MEDICAL & SURGICAL MANAGEMENT

Course Description: The course covers topics related to mechanism, clinical manifestation, medical and surgical management of sports injuries.

Course Objective: The course should enable the student to develop a detailed concept about different sports injuries and its medical and surgical management.

Course Outcome: The Students will be able to use this information in planning and tailoring effective, specific, safe physiotherapy treatment programmes

Sports specific injuries, with special emphasis on the specific risk factor, nature of sports, kind of medical intervention anticipated and prevention with respect to individual sports- Individual events: Field & Track, Team events: Hockey, Cricket, Football & other sports.

Contact and Non-contact sports, Water sports

Chest and abdominal injuries: Rib fractures, abdominal wall contusions, sports hernia etc.

Injuries in Upper extremities:

Acromioclavicular joint dislocation, anterior shoulder dislocation, biceps rupture, frozen shoulder, impingement syndrome, rotator cuff tears, Labral lesions, Lateral epicondylitis, medial epicondylitis, stress fractures of radial epiphysis, Carpal tunnel syndrome, fractures and dislocations of hand and wrist etc.

Injuries to Lower extremities and Spine:

Hip joint labral tears, soft tissue ruptures involving rectus femoris, groin pain, nerve entrapment, stress fractures of femoral neck, knee ligament injuries, patellar injuries and dislocations, ITB friction syndrome, Muscle strains, ankle sprains, nerve entrapments at ankle, rupture of achillis tendon, stress fractures etc. soft tissue injuries, Spinal deformities and fractures of thoracic and lumbosacral spine etc.

Emergency Medical Planning And Cover For Sports Events

Emergency Situations, Primary and secondary emergency assessment, emergency plan, transportation of an injured student, Treatment of collapsed athlete- Severe head injury, Athlete with spinal injury, hypothermia, Causes of Collapse

Protective Equipment in sports

Principles of protective equipment, Protective Equipment for: Head & Face, Upper & Lower Extremity

Handwritten signatures in blue ink:

Handwritten signature and date in green ink:
20/2/22

Female Athlete

Female Athlete and their Concerns, Sports Amenorrhea, Injury to female reproductive tract, Menstrual Synchrony, Sex determination, Exercise and pregnancy, Eating disorders in athletes

Disabled Athlete

Wheel chair skills, type advantages & disadvantages, Various skills of wheel chair for effective rehabilitation.

Infections And Other Medical Conditions

Diagnosis and management of skin conditions of Athletes, Bacterial infections, Fungal infections, Viral infections, boils and cellulitis, Venereal Diseases, Common Cold, Diarrhea, Dysentery, Typhoid, Cholera, Amoebiasis, Food Poisoning, Tuberculosis, Malaria, Hepatitis, AIDS. Hypertension, Urine abnormalities; Anemia, Diabetes mellitus,

Head Injuries

Skull fracture, epidural hematoma, subdural hematoma, subdural hematoma, cerebral contusions, Concussion: Classification system, post concussion syndrome and its management, Punch drunk syndrome, Post concussion syndrome, Maxillofacial Region Airway Management in Head Injuries, Soft tissue injuries of head, Lacerations and its types, Ocular and facial injuries: Lefort Classification.

Trauma Management

Cardio Pulmonary Resuscitation (CPR) with practical hands on training (basic and advanced); Shock management, Internal and External bleeding, Splinting, Stretcher use- Handling and transfer, Management of Cardiac arrest, Epilepsy, Drowning, Burn, Medical management of mass participation. Heat stroke and Heat illness.

FOR MPT (OBS & GYNAE) STUDENTS

MPT 204G- OBSTETRICS & GYNAECOLOGICAL DISORDERS: MEDICAL & SURGICAL MANAGEMENT.

Course Description: The course covers topics related to etiology, clinical manifestation, medical and surgical management of obstetric and gynecological diseases and disorders

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

Course Outcome: The Students will be able to use this information in planning and tailoring effective, specific, safe Physiotherapy treatment programmes

Handwritten signatures and initials in blue and green ink at the bottom of the page.

GENERAL GYNAECOLOGICAL PROBLEMS

1. Ovarian Cyst, Poly cystic ovarian syndrome, Infertility
2. Endometriosis, Fibroid, Pelvic pain
3. Pelvic inflammatory disease, UTI
4. Gynaecological trauma and sexually transmitted disease
5. Menopause and Osteoporosis
6. Gynaecological Problems in adolescent population
7. Breast cancer its screening

PELVIC FLOOR DISORDERS

1. Pelvic organ prolapse
2. Urinary incontinence, faecal incontinence
3. Recurrent UTI, Levator ani Syndrome
4. Coccygodynia, Pudendal neuralgia
5. Injury of female genital tract

PREGNANCY AND LABOUR

1. Antenatal period,
2. Complication during pregnancy
3. Postnatal period
4. Labour, Diagnosis of labour
5. Complication of labour, Management of labour

(GYNAECOLOGICAL SURGERY)

1. C section, Laparoscopic and LASER surgery in Gynaecological condition
2. Hysterectomy, Oophorectomy, IVF
3. Gynaecological repair surgery
4. MTP and DNC
5. Mastectomy

SPECIAL TOPICS IN OBSTETRICS

1. Intrapartum foetal monitoring
2. Foetal distress
3. Shock in obstetrics
4. Acute renal failure in obstetrics
5. Blood coagulation disorder in obstetrics
6. High risk pregnancy
7. Medical legal aspects in obstetrics
8. Diagnostic procedures in gynaecology and obstetrics.

PRACTICALS

MPT 201P ELECTROPHYSIOLOGY

The student will undergo laboratory training in Electrophysiology .

MPT 202P ADVANCES IN PHYSIOTHERAPY ASSESSMENT

This involves application of topics in PAPER MPT 202 via demonstrations, field visits and case presentations.

Suj *AK* *Se* *AK* *AK*

MPT 203P ADVANCES IN PHYSIOTHERAPY TECHNIQUES

This involves application of topics in PAPER MPT 203 via demonstrations, field visits and case presentations.

MPT 205 CLINICS & SEMINARS

These will serve as a platform for students to integrate various components of patient management. Students will give presentations on topics provided to them. Students will engage in clinical Physiotherapy Department to enhance their clinical skills and apply theoretical knowledge gained during teaching sessions.

THIRD SEMESTER

Course No.	Title	Total Hours	Hour s/ week	Credits	IA Marks	SE Marks	Total Marks
MPT 301	General Principles of Pedagogy	50	2	4	25	75	100
MPT 302	Clinic Management & Administration	50	2	4	25	75	100

MPT 303	Elective-2	50	2	4	25	75	100
MPT 304	Elective-3	50	2	4	25	75	100
MPT 304P	<i>Practical- I Elective-3</i>	50	1	2	25	75	100
MPT 305P	Practical II Dissertation	50	1	2	25	150	200
Total		300	10	20	175	525	700
MPT 306	Clinics & Seminars Presentations	250	6	6	50	50	100
Grand Total		550	16	26	225	575	800

Elective 2:

MPT 303O	Orthopaedic Biomechanics	50	2	4	25	75	100
MPT 303N	Neuro Biomechanics	50	2	4	25	75	100
MPT 303C	Cardio Pulmonary Biomechanics	50	2	4	25	75	100
MPT 303S	Sports Biomechanics	50	2	4	25	75	100
MPT 303G	Obs & Gyn Biomechanics	50	2	4	25	75	100

Elective-3

MPT 304O	Advances in Orthopaedic Physiotherapy Assessment & Management-I	50	2	4	25	75	100
MPT 304N	Advances in Neuro Physiotherapy Assessment & Management-I	50	2	4	25	75	100
MPT 304C	Advances in Cardio pulmonary Physiotherapy Assessment & Management-I	50	2	4	25	75	100
MPT 304S	Advances in Sports Physiotherapy Assessment & Management-I	50	2	4	25	75	100
MPT 304G	Advances in Obs & Gynae Physiotherapy Assessment	50	2	4	25	75	100

Surj *AK* *AK* *AK* *AK*

	& Management-I						
--	----------------	--	--	--	--	--	--

MPT 301 GENERAL PRINCIPLES OF PEDAGOGY

Course Description: The course covers topics related to education theory.

Course Objective: On completion of the course the student should be able to understand the dynamics of teaching & learning.

Course Outcome: The student should be able to demonstrate adequate knowledge in pedagogy and educational philosophy.

1. Philosophy of education and emerging issues in Education meaning, functions and aims of education.
 - Formal, informal and non- formal education.
 - Agencies of education
 - Current issues and trends in higher education
 - Issues of quality in higher education, autonomy and accountability, privatization, professional development of teachers, education of persons with disabilities.
 - Need for education philosophy
 - Some major philosophies, Idealism Naturalism, Pragmatism and their implications for Education.
2. Concept of teaching and learning
 - Meaning scope of educational psychology
 - Meaning and relationship between teaching and learning
 - Learning theories
 - Dynamics of behaviour
 - Individual differences
3. Curriculum
 - Meaning and concept
 - Basis of curriculum formulation development
 - Framing objectives for curriculum
 - Process of curriculum development
 - Factors affecting curriculum development
 - Evaluation of curriculum

MPT 302 CLINIC MANAGEMENT, ADMINISTRATION

Course Description: The course covers topics related to physiotherapy clinic and department management.

Course Objective: On completion of the course the student should be able to understand the basic issues of physiotherapy management & administration

Course Outcome: The student should be able to demonstrate adequate knowledge and skill in physiotherapy clinic and department management.

Singh *Ra* *Om*

This course deals with issues of management to assist the practitioner in efficiently addressing issues related to the organization and administration of a Physiotherapy Department following are the topics to be included but limited to:

MANAGEMENT

1. Functions of management,
 2. Evaluation of management through scientific management theory,
Classical theory
System approach
Contingency approach
 3. Management process
Planning, Organization, direction, controlling (decision making)
 4. Introduction to personnel management
Staffing recruitment selection, performance appraisal, collective bargaining, discipline, job satisfaction.
 5. Quantitative methods of management
Relevance of statistical and/or techniques in management.
 6. Marketing
Market segmentation, marketing research production planning pricing, channels of distribution, promotion, consumer behaviour, licenser.
1. Total quality management
Basis of quality management – acid for quality control quality assurance program in hospitals, medical audit, and international quality system.

ADMINISTRATION

1. **Hospital as an organization** Functions and types of hospitals selected clinical supportive ancillary services of a hospital, emergency department, nursing, physical medicine & rehabilitation, clinical supportive and ancillary services of a hospital, emergency department nursing physical medicine & rehabilitation, clinical laboratory, pharmacy and dietary dept.
2. Roles of Physiotherapist, Physiotherapy Director, Physiotherapy supervisor, Physiotherapy assistant, Physiotherapy aide, Occupational Therapist, Home health side, Volunteer. Directed care and referral relationship and confidentially.

MPT 303 - Elective 2:

MPT 3030	Orthopaedic Biomechanics	5 0	2	4	25	75	100
-------------	--------------------------	--------	---	---	----	----	-----

Handwritten signatures and initials in blue and green ink.

MPT 303N	Neuro Biomechanics	50	2	4	25	75	100
MPT 303C	Cardio Pulmonary Biomechanics	50	2	4	25	75	100
MPT 303S	Sports Biomechanics	50	2	4	25	75	100
MPT 303G	Obs & Gyn Biomechanics	50	2	4	25	75	100

MPT 303 ELECTIVE -2

FOR MPT (ORTHO) STUDENTS –ORTHOPAEDIC BIOMECHANICS

Course Description: the course covers the understanding of Biomechanics and kinesiology of body movement related to orthopaedic conditions.

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

Course Outcome: On completion of the study of this Course the student should be able to identify and apply the principles of biomechanics and kinesiology in understanding patho-mechanics of various orthopaedic conditions. To use these principles in managing various orthopaedic conditions.

BONE MECHANICS

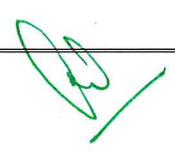
Structure & composition of bone Stress Strain Modulus of rigidity & modulus of elasticity Poisson’s effect Strain energy Static & cyclic load behaviors Load Mechanical properties of trabecular bone Mechanical properties of cortical bone Bone remodeling Response of the bone to aging & exercise & immobilization Mechanisms to prevent fracture present in bone Fracture prediction Behavior of bone under load. Use of Universal testing machine to study bone behaviour under load. Clinical applications Failure criteria.

JOINT MECHANICS

Joint Design Joint categories Joint functions Arthrokinematics Osteokinematics Kinematics chains Joint forces, equilibrium & distribution of these forces Joint stability & its mechanism Articular Cartilage Mechanics. Testing of articular cartilage under load. Clinical applications.

APPLICATION OF BONE AND JOINT MECHANICS

Load sharing & load transfer after Amputation.Prosthetic design criteria Bio-mechanical analysis of implants internal fixations Degenerative changes in weight bearing joints & compensatory actions.

Surya *Ra* *DR* 

BIOMECHANICAL ANALYSIS IN VARIOUS ORTHOPAEDIC CONDITIONS

Osteoarthritis, Rheumatoid Arthritis, Post polio residual paralysis, low back pain, knee injuries, foot disorders, hand injuries, tendon transfers, amputation, Changes in gait following various orthopaedic surgeries/ diseases/ disorders etc.

FOR MPT (NEURO) STUDENTS –

MPT 303N- NEURO BIOMECHANICS

Course Description: the course covers the understanding of Biomechanics and kinesiology of body movement related to neurological conditions.

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

Course Outcome: On completion of the study of this Course the student should be able to identify and apply the principles of biomechanics and kinesiology in understanding patho-mechanics of various neurological conditions. To use these principles in managing various neurological conditions.

REVIEW OF NEURO ANATOMY

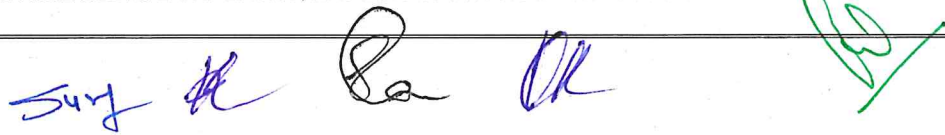
Introduction to Nervous system and its subdivisions, Anatomy of the Neuron, Anatomy of the Reflex Arc, structure of spinal cord with a detailed study of ascending and descending Tracts, Anatomy of cerebrum and Brodman's classification, Blood Supply of the Brain, Anatomy of Cerebellum, Brainstem and Basal Ganglia, Limbic system

REVIEW OF NEURO PHYSIOLOGY

Synapse and its transmission, sensory Receptors and Their Basic Mechanisms of Action, Physiology of Muscle tone and study of spasticity, Physiology of Muscle contraction, Neural Plasticity, Neural transmitters and their functions

BIOMECHANICAL ANALYSIS IN VARIOUS NEUROLOGICAL CONDITIONS

1. Biomechanical analysis in Stroke
2. Biomechanical analysis in Cerebral Palsy
3. Biomechanical analysis in Parkinsonism
4. Biomechanical analysis in Spinal Cord Injury
5. Biomechanical analysis in Post-Polio Residual Paralysis
6. Biomechanical analysis in Head Injury
7. Biomechanical analysis in Motor Neuron Disease
8. Biomechanical analysis in Muscular Dystrophies
9. Biomechanical analysis in other Pathological gaits
10. Biomechanics of Stair climbing



11. Biomechanics of Fall, Trip, Stumble.
12. Changes in gait following various neuro surgeries/ diseases/ disorders

FOR MPT (CARDIO) STUDENTS

MPT 303C- CARDIO PULMONARY BIOMECHANICS

Course Description: the course covers the understanding of Biomechanics and kinesiology of body movement related to cardiopulmonary conditions.

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

Course Outcome: On completion of the study of this Course the student should be able to identify and apply the principles of biomechanics and kinesiology in understanding patho-mechanics of various cardiopulmonary conditions. To use these principles in managing various cardiopulmonary conditions.

REVIEW OF CARDIOPULMONARY ANATOMY

1. Coronary Circulation
2. Structure of the Myocardium
3. Nerve Supply of the Heart.
4. Anatomy of the Upper and Lower Respiratory Tract
5. Bronchopulmonary Segments.
6. Major arteries and Veins.
7. Lymphatic system.
8. Pulmonary circulation
9. Systemic circulation.
10. Hepatic circulation.
11. Muscles of Respiration.
12. Thoracic cage.

REVIEW OF CARDIOPULMONARY PHYSIOLOGY

1. Cardiac Physiology and Circulation
a) Physiology of Cardiac Muscle
b) Cardiac Cycle
c) Rhythmic Excitation of the Heart
d) Blood Pressure
e) Heart Sounds
f) Mechanism of regulation of blood pressure and factors affecting.
g) Hematology
h) Endocrine Physiology
2. Respiration
a) Pulmonary Volumes and Capacities
b) Principles of Gas Exchange
c) Regulation of respiration
d) Mechanisms of Respiration
3. Body Fluids and Kidney
a) Oedema
b) Capillary Dynamics

BIOMECHANICS OF CARDIO PULMONARY SYSTEM

Cardiac mechanics-

- Energetic of muscle: Chemical energy for muscle contraction, generation of chemical energy for muscle contraction, muscle efficiency, glycolysis and oxidative metabolism, fenn's effect, heat liberation of active muscle, the hill equation.
- Structure of heart: Contractile proteins and cytoskeleton, properties of cardiac muscles, mechanism and Control of cardiac contractile process, length-tension relationship and force-velocity relationship.

Surj *SR* *SR* *SR* *SR*

- Work of heart: Cardiac cycle, Internal and external work of the heart, cardiac ion channels, Cardiac action potential, conduction system of the heart, myocardial contractility and lusitropy, determinants of ejection and filling, neurohumoral response of the heart and haemodynamic defense reaction.
- Flow Mechanics:
Various parameters explaining the flow and fluid mechanics , Various laws governing the flow of fluids, the volume of fluids, the pressure of fluids, energy of fluids,
- Clinical application of Fluid Mechanics : Vascular Biomechanics , Haemodynamics: Velocity of blood stream, relationship between velocity and pressure, relationship between pressure and flow, resistance to flow, laminar and turbulent flow, shear stress on vessel wall, dispensability of blood vessels, determinants of mean arterial pressure, rheological properties of blood, coronary circulation.
- Mechanics of Lymph circulation: Flow of Lymph, Channels, Pressure in Lymphatic vessels, Effect of manual lymph drainage.

Pulmonary mechanics-

- Thoracic Cage: Kinematics and kinetics of thoracic cage, pressure and volume relationship of lung and thoracic cage, compliance-static and dynamic, principles of measurement of lung volumes and compliance.
- Mechanics of Postural Drainage- Mechanics of postural drainage from each lobe of the lung.
- Airways Resistance: Tissue resistance, flow resistance, factors determining airways resistance, measurements of airway resistance, dynamic compression of airways, closing volumes.

Pulmonary circulation: Pulmonary blood volume, pulmonary blood flow, pulmonary vascular pressure, pulmonary vascular resistance, principles of measurements of pulmonary circulation, diffusion of oxygen, carbon dioxide and inert gases, alvelocapillary permability, oxygen kinetics.

FOR MPT (SPORTS) STUDENTS

MPT 303S – SPORTS BIOMECHANICS

Course Description: the course covers the understanding of Biomechanics and kinesiology of body movement related to sports conditions.

Surj *R* *Pa* *DR* *28/4/22*

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

Course Outcome: On completion of the study of this Course the student should be able to identify and apply the principles of biomechanics and kinesiology in understanding patho-mechanics of various sports conditions. To use these principles in managing various sports conditions.

BIOMECHANICS OF SPORTS TECHNIQUES

Basic principles of biomechanics are reinforced with added emphasis on the changes in biomechanical function and their subsequent effect on the potential and influence on overuse injuries. scientific basis for analyzing the various sports techniques used in baseball, basketball, football, golf, gymnastics, softball, swimming, and track and field's running, jumping, and throwing.

Biomechanics of Running

Biomechanics of Throwing

Biomechanics of Jumping,

Biomechanics of Swimming

Biomechanics of Cricket Bowling

Biomechanics of Football

Biomechanics of Running with prosthesis

The student to analyze, explain and correct abnormal human movement of the above Sports Biomechanics using a variety of evaluative techniques and computerized tools.

BIOMECHANICS OF SPORTS ORTHOSIS & PROSTHESIS

Biomechanics of Sports Orthotics and Prosthesis of Upper Limb

Biomechanics of Sports Orthotics and Prosthesis of Lower Limb

Biomechanics of Sports Wheelchairs

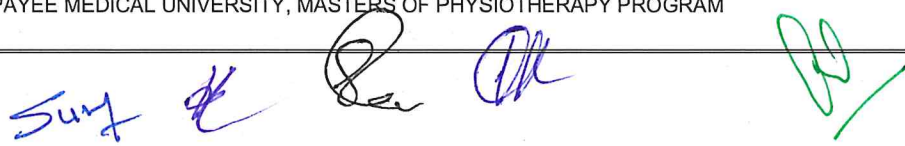
FOR MPT (OBS & GYNAE) STUDENTS

MPT 303G – OBSTETRICS & GYNAE BIOMECHANICS

Course Description: the course covers the understanding of Biomechanics and kinesiology of body movement related to obstetrics & gynecological conditions.

Course Objective: the course should enable the student to acquire in depth knowledge in understanding the biomechanics and kinesiology related to obstetrics & gynecological conditions.

Course Outcome: On completion of the study of this Course the student should be able to identify and apply the principles of biomechanics and kinesiology in understanding patho-mechanics of various obstetrics & gynecological conditions. To use these principles in managing various obstetrics & gynecological conditions.



Pelvic Floor Anatomy

Levator Ani and Anal Sphincters, Connective Tissue Supports of the Pelvic Organs, Interactions among Different Compartments, Pelvic organ prolapse, Pathophysiology, Levator ani muscles, Cardinal ligaments, Uterosacral ligaments, Paravaginal defect, Biomechanics, The Bony Pelvis and its Articulations, The Skeletal Pelvis as a Whole, Muscles of the Thoracoabdominal Pelvic Cavity, Muscles of the Anterolateral Abdominal Wall, Muscles of the Pelvis, Fascia: In General and Specific to the Female Pelvis, Neuroanatomy of the Female Pelvis, Abdominal Wall, Pelvic Floor Dysfunction.

Biomechanical Characterization of Native Pelvic Floor Organs and Tissues

Pelvic Floor Tissue Constituents and Characteristics, Functions of Pelvic Floor Organs- Active mechanics, Passive mechanics, Common Experimental Conditions and Considerations- Uniaxial testing, Preconditioning, Temperature, Hydration, Tissue storage, Cross-Sectional Area and Strain Measurements, Examples of Mechanical Testing Related to the Pelvic Floor- Mechanical testing, Structural testing, Planar biaxial tensile testing, Biaxial Tensile Testing

Biomechanical measurements in animal models

Current Animal Models and Their Applications- Pelvic organ prolapsed, Small Animal Models- Sheep models, Rodent models, Rabbit models, Large Animal Models- Primate models, Bipedal pelvic mechanics, Quadruped pelvic mechanics

Biomechanics of pelvic floor prosthetic materials

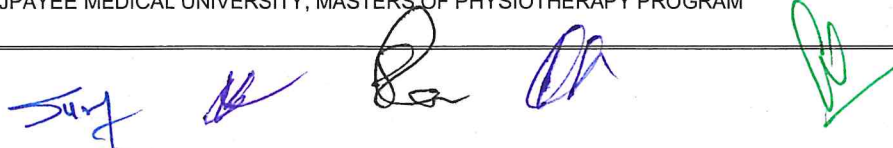
Overview of Prosthetic Devices- Mechanical testing of Prolapse, Mechanical Tests Used to Evaluate Synthetic Meshes- Mechanical Analysis of Mesh-Tissue Complexes- Structural properties, Polypropylene mesh, Synthetic mesh, Application of Mechanical Tests to the Characterization of the ex vivo Structural Properties and Mechanical Behaviors of Synthetic Meshes- Biological Implications of Mechanical Behavior, Structural, and Textile Properties of Synthetic Meshes- in Stress urinary incontinence, Mechanics of Pelvic Floor Prosthetic Development.

Influencers of Pelvic Floor Biomechanics

Biochemistry and Ultrastructure of pelvic floor tissues and organs, Impact of Genetics on pelvic floor biomechanics, Impact of Pregnancy/Childbirth on pelvic floor biomechanics, Impact of Pregnancy on Biomechanics of Pelvic Floor, Pregnancy-Induced Alterations in Vaginal Biomechanical Properties, Pregnancy-Induced Alterations in Biomechanical Properties of Pelvic Floor Muscles, Impact of Vaginal Delivery on Biomechanics of Pelvic Floor, Impact of Vaginal Delivery on Pelvic Floor

Biomechanical environment of the pelvic floor

Physiological Function of the Pelvic Floor, Disruption of Pelvic Floor Biomechanics Leads to Incontinence and Prolapse, Pelvic Floor Changes with Rehabilitation, Electromyography EMG Timing with Cough, Valsalva, Mixed urinary incontinence, Stress urinary incontinence, Effect of Physical activity on the pelvic floor



Imaging & Segmentation of Pelvic Floor

Ultrasound Imaging of the pelvic floor: Dynamic Ultrasound Image Analysis, Timing of Pelvic Contractions, Visualization of the Pathway of Bladder/Urethra and ARA During a Cough, Visualization of the Pathway of Bladder/Urethra and ARA During Voluntary PFM's Contraction, Visualization of the Pathways of Bladder/Urethra and ARA During Valsalva, Strain Analysis of 2-D Dynamic Ultrasound Images, Elastic Properties, Vaginal Probe, Summary of Ultrasound Imaging Parameters

MRI imaging of Pelvic Floor: Puborectalis, Levator ani, Technique- Pubococcygeal line, H line, M line, Interpretation- Rectocele, Cystocele, Stress Incontinence, Bladder and Uterine Prolapse, Rectal Prolapse and Constipation, Geometric representation of PF tissues, MR Image Acquisition- Source image, Segmentation, 3-D reconstruction, Image stack, Image data set, Voxel dimensions, Slice thickness, Gap, Identifying the Pelvic Organs, Segmenting the Pelvic Organs, Types of Image Segmentation, Model Geometry, Barriers to Optimal Geometric Representation, Image segmentation of pelvic floor (including super-resolution imaging methods), Introduction, Image Acquisition, Manual Segmentation/Template Pool Generation, Label fusion, Finite element method

Biomechanical Characterization of the Pelvic Floor using Tactile Imaging : Tactile Imaging: Elastography tactile imaging, Bench Testing: Tissue elasticity, Muscle function, Young's modulus, Clinical Application

Biomechanical Modeling and Simulation of Pelvic Floor

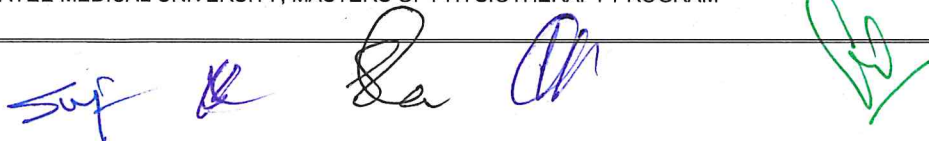
Computational Tools for Pelvic Floor Biomechanical analysis: The Need for Better Software Tools, Methods and Capabilities- Finite element analysis, Meshfree modeling, Analysis-suitable geometry, Discrete point sets, Point clouds, Applications- Medical images, Patient-specific medicine, Epidemiological studies, Applications of pelvic floor Modeling and Simulation, Developing Anatomical 3-D Models of the Pelvic Floor, Biomechanical Models of the Pelvic Floor, Applications of Pelvic Floor Models

Building PF Simulations: Image Processing, Obtaining the Geometry, Simulation- Meshfree analysis, Extreme deformation, Patient-specific model, Interpretation of Results, Simulations of Female Pelvic Floor Dysfunction, An Introduction to Pelvic Organ Prolapse, Using Systems Analysis to Assess Biomechanical Factors Involved in Pelvic Organ Prolapse, Using Biomechanical Modeling to Obtain Insights into the Pathomechanics of Prolapse- Prolapse size, Prolapse type, Verification.

Biomechanical Childbirth Simulations: The Mechanics of Labor, Computational Simulation of Childbirth. Numerical simulations

PF biomechanics - What have we learned, what can we learn? Future work/directions

MPT 304- Elective-3



MPT 304O	Advances in Orthopaedic Physiotherapy Assessment & Management-I	5 0	2	4	25	75	100
MPT 304N	Advances in Neuro Physiotherapy Assessment & Management-I	5 0	2	4	25	75	100
MPT 304C	Advances in Cardio pulmonary Physiotherapy Assessment & Management-I	5 0	2	4	25	75	100
MPT 304S	Advances in Sports Physiotherapy Assessment & Management-I	5 0	2	4	25	75	100
MPT 304G	Advances in Obs & Gynae Physiotherapy Assessment & Management-I	5 0	2	4	25	75	100

FOR MPT (ORTHO) STUDENTS**MPT 304O- ADVANCES IN ORTHOPAEDIC PHYSIOTHERAPY ASSESSMENT & MANAGEMENT-I****Course Description:**

The course covers topics on various school of thoughts of assessment and management in various types of orthopaedic disease and disorders. Emphasis will be made on clinical decision making and integrating skills within the overall plan of care for the patient. Class will include lecture, laboratory and clinical experiences.

Course Objective: The course should enable the student to acquire in-depth understanding and skill in managing musculoskeletal conditions by using various type of physiotherapeutic techniques in orthopaedic disease and disorders.

Course Outcome: The student should be able to compare & contrast the outcome of various physiotherapy approaches in orthopaedic disease and disorders.

ASSESSMENT & MANAGEMENT OF REGIONAL ORTHOPEDIC CONDITIONS OF UPPER QUADRANT:

Treatment of the regional and traumatic, post surgical Orthopedics conditions of Upper quadrant. musculoskeletal conditions involving the shoulder complex, elbow, wrist and hand.

ASSESSMENT & MANAGEMENT OF REGIONAL ORTHOPEDIC CONDITIONS OF LOWER QUADRANT:

Treatment of the regional orthopedic and traumatic post surgical conditions of Lower quadrant musculoskeletal conditions involving the hip, knee, ankle and foot.

ASSESSMENT & MANAGEMENT OF REGIONAL ORTHOPEDIC CONDITIONS OF CERVICAL AND THORACIC SPINE:

Surf B Ee Dh

Treatment of the regional and traumatic post surgical orthopedic conditions of cervical and thoracic spine musculoskeletal conditions involving the cervical spine, the thoracic spine and rib cage.

ASSESSMENT & MANAGEMENT OF REGIONAL ORTHOPEDIC CONDITIONS OF LUMBOPELVIC SPINE:

Treatment of the regional and traumatic, post surgical orthopaedic conditions of lumbopelvic spine musculoskeletal conditions involving the lumbopelvic complex, including the hip joint.

ASSESSMENT & MANAGEMENT OF RHEUMATOLOGICAL CASES

RA, AS, Gout, Psoriatic arthropathy, Spondyloarthropathy, Undifferentiated spondyloarthropathy. Nerve injury of Upper limb and lower limb. Entrapment neuropathy of upper and lower limb.

FOR MPT(NEURO) STUDENTS

MPT 304N- ADVANCES IN NEUROLOGIC PHYSIOTHERAPY ASSESSMENT & MANAGEMENT-I

Course Description: The course covers topics on various school of thoughts of neurological therapy techniques and physiotherapy intervention in various types of neurologic disease disorders. The course aims to provide a more functional and comprehensive approach based on manual therapy to manage a range of neurological conditions.

Course Objective: The course should enable the student to acquire in-depth understanding and skill in managing neurological conditions by using Neurological therapy and various type of physiotherapeutic techniques.

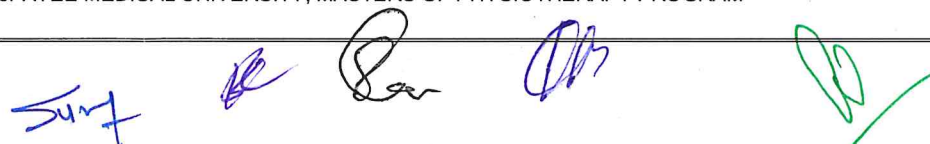
Course Outcome: The student should be able to compare & contrast the outcome of various neurological therapy approaches.

THEORETICAL FOUNDATIONS FOR CLINICAL PRACTICE

Foundations for Clinical Practice, Movement Development across the LifeSpan, The Limbic System: Influence over Motor Control and Learning, Psycho-social aspects of Adaptation and Adjustment during various phases of neurological Disability, Interventions for Neurological Disabilities, Documentation of Neurological conditions.

THEORETICAL FRAMEWORK:

Motor Control: Issues and Theories, Motor Learning and Recovery of Function, Physiology of Motor Control, Neuroplasticity: Physiological Basis of Motor Learning and



Recovery of function, Constraints on Motor Control, A Conceptual Framework for Clinical Practice.

POSTURAL CONTROL:

Normal Postural Control, Development of Postural Control, Aging and Postural Control
Abnormal Postural Control, Clinical Management of the Patient with a Postural Control Disorder

MOBILITY FUNCTION:

Control of Normal Mobility, A Life Span Perspective of Mobility (a) Development of locomotion (b) Locomotion in Older Adults, Abnormal Mobility, Clinical Management of the Patient with a Mobility Disorder.

REACH, GRASP, AND MANIPULATION: Normal Reach, Grasp, and Manipulation, Reach, Grasp, and Manipulation: Changes Across the Life Span a. Early development of reach grasp and manipulation b. Changes in older adults, Abnormal Reach, Grasp, and Manipulation, Clinical Management of the Patient With Reach, Grasp, and Manipulation Disorders

FUNDAMENTALS OF THERAPEUTIC APPROACHES

1. Proprioceptive Neuromuscular Facilitation (PNF)
2. Neurodevelopmental therapy (NDT)
3. Sensory integration Technique (SIT)
4. Motor Relearning Program (MRP)
5. Constraint Induced Movement Therapy (CIMT)
6. Roods approach
7. Vojta Therapy 8. Mental imagery technique
8. Neural mobilization
9. Sexual rehabilitation techniques in Neurological disorders and disability.

ASSISTIVE TECHNOLOGY IN NEUROLOGICAL POPULATION:

Body weight support treadmill training (BWST), Biofeedback, Assistive Technology in neurological population with special focus on 1. Spinal cord injury. 2. Motor Neuron diseases. 3. Muscular dystrophies. 4. Hemiplegia. 5. Traumatic brain injury

SPECIAL SETTINGS AND SPECIAL CONSIDERATIONS

Neurological and neurosurgical ICUs, Early Intervention Services, Assistive Technology, The Special Care Nursery, Neuro – Development of a child, Neurodevelopmental Screening

HAND ASSESSMENT AND REHABILITATION: condition wise assessment tools for hand like jamar dynamometer, pinch dynamometer, monofilament, assessment of power grip and pinch grip. Assessment and management of hand conditions

ALTERNATIVE AND COMPLEMENTARY THERAPIES:

Beyond traditional approaches to intervention in neurological diseases, syndromes and disorders-Tai Chi, Cranio sacral therapy, Electroacupuncture, Biofeedback

PHYSIOTHERAPY MANAGEMENT OF NEUROLOGICAL DISORDERS & VESTIBULAR DISORDERS.

FOR MPT (CARDIO) STUDENTS

MPT 304C – ADVANCES IN CARDIO PHYSIOTHERAPY ASSESSMENT & MANAGEMENT-I

Course Description: The course covers topics related to cardiopulmonary physiotherapy assessment, diagnostic procedure interpretation, measurement and therapeutic equipments use in managing different disorders affecting cardiopulmonary systems.

Course Objective: The course should equip the student to acquire in-depth knowledge in different physiotherapy assessment, measurement and therapeutic equipment used in management of different disorders affecting the cardiopulmonary system.

Course outcome: The student should be able to:

1. To perform a comprehensive and complete Physiotherapy assessment of various cardiopulmonary patients.
2. To document systematic, meaningful, accurate written records of the patient.
3. To assess and eventually design individualized treatment strategies and measure outcome of intervention on measurement equipment for the cardiopulmonary patients.

ASSESSMENT OF PULMONARY SYSTEM AND DISEASES : History taking, General appearance of the patient, Physical examination of chest, topographical and anatomical landmarks, Visual inspection, Analysis of chest shape and dimensions, Posture or preferred positioning, Breathing pattern, Chest mobility, Tracheal deviation, Inspection- Chest wall deformities, respiratory pattern, cyanosis, clubbing, palpation, Chest wall pain, Mediastinal shift, Mediated percussion, Auscultation of breath sounds, Cough and cough production,

ASSESSMENT OF CARDIAC SYSTEM AND DISEASES: determination of chief complaint, Review of patient history, Physical examination, Observation, Inspection and

547 16 E DR

palpation, Auscultation of the heart: heart sounds, normal & abnormal, Assessment of Fatigability, Laboratory investigations, Physiological tests

ASSESSMENT OF PATIENTS WITH CARDIOTHORACIC SURGERIES: chief complaints, History taking, Associated comorbidities, Investigation, Chest x-ray, ECG: Lead placement, tracing, recording, interpretation of normal & abnormal stress testing, Electrocardiography, Auscultation, Operative procedure, Incision line, Type of surgery Any special event, Medication, ADL + Functional evaluation in cardiac patients, Exercise testing, Low level/submaximal/maximal, Procedure of testing, Contraindications & precautions in adults and Paediatrics, Exercise testing and prescription, METS in stress testing.

ASSESSMENT OF PERIPHERAL VASCULAR DISEASES: Personal information from patient, Duration of onset of problem, Medical/ social history, Medications, Allergic history, Cursive assessment, Pain assessment, Wound history, Other objective tests-a) Temperature b) Girth c) Volumetric d) Pulse e) Bruits f) Percussion test g) Trendelenburg test h) Cuff test i) Doppler index j) Rubor of dependency k) Venous filling time l) Claudication time m) Semmes-Weinstein monofilament testing n) Other findings

ASSESSMENT OF FUNCTIONAL STATUS: Generic questionnaires, Disease specific questionnaires, Performance-based tests, Standardized evaluation scales relevant to cardiopulmonary conditions- dyspnea assessment scale, quality of life assessment.

Measurement Scale: Scales used in pulmonary rehabilitation: Becks Depression Inventory (BDI) and Hamilton Anxiety Scale (HAS);mni- mental state examination, SGRQ,CRQ,SF 36,CAT,Activities-specific balance scale (ABC) etc.

DIAGNOSTICS: Stethoscope, Percussion, Hematology and biochemistry, Arterial blood gas analysis, Bronchoscopy, Invasive and non-invasive techniques, Pulmonary function testing, Electrocardiography, Echocardiography, Cardiac catheterization, Radio nuclide scanning, Ventilation perfusion scan, Ultrasound, Pressure monitoring-CVP, Spirometry, Haemodynamic Monitoring, Intra arterial line, Pulmonary artery balloon floatation catheters, Measurement of CVP, Intra aortic balloon counter pulsation device, Measurement of ICP, Ankle Brachial Index, Imaging-plain X-Ray, Computed tomography, magnetic resonance imaging, doppler test.

THERAPEUTIC INSTRUMENTS: Chest tube drainage and fluid collection system, Ventilator-Mode of ventilator, Type of ventilator, Physiological principle of ventilator, Weaning from the ventilator. Care of Artificial Airway, PEEP, BiPAP, CPAP. Oxygen Therapy- High flow system, Low flow system, Complication of oxygen therapy, Hyperbaric oxygen therapy. Endotracheal tube, Cuff Inflation pressure, Suctioning- Indication, Contraindication, complication, Suction catheters, Suction pressure. Flutter, Mechanical chest vibrator, Peak flow meter, Humidification- Types of humidifier. Nebulizer.

RECENT TRENDS IN CARDIOPULMONARY PHYSIOTHERAPY: Respiratory muscle stretch, Extracorporeal membrane oxygenation (ECMO), Intensive care unit-acquired weakness (ICUAW), Continuous rotational therapy, Intrapulmonary percussive

Surf *K* *Ra* *OK* *AD*

ventilation (IPV), Positive expiratory pressure (PEP), Manual hyperinflation (MHI), Ventilator hyperinflation (VHI), Mechanical Insufflation-exsufflation, Neurophysiological stimulation of Respiration(NPF), PNF in Respiration.

CARDIAC REHABILITATION: Overview: major manifestations of heart disease & cardiac rehabilitation- Definition of cardiac rehabilitation, Phases of cardiac rehabilitation, Outcome measures in cardiac rehabilitation, Risks of acute exercise, Potential mechanisms of exercise benefit, Exercise prescription for cardiac rehabilitation, General guidelines and preliminary Considerations, Phase I: Inpatient cardiac rehabilitation, Phase II: Outpatient cardiac rehabilitation, Phase III and IV: community-based cardiac rehabilitation program, Considerations for special populations, Patient education: guidelines in cardiac rehabilitation.

PULMONARY REHABILITATION

1. Oxygen therapy
2. Humidity and aerosol therapy including drug inhalation
3. Assessment of pulmonary function test
4. Functional performance assessment
5. Exercise testing: incremental shuttle walk test, endurance shuttle walk test, six minute walk test, Step test, treadmill tests.(i.e. Balke, Bruce, Noughton, Modified Bruce protocol), interval bike test, sub maximal GXT, symptom limited GXT, exercise testing using cycle ergometer, oxygen uptake (VO₂)

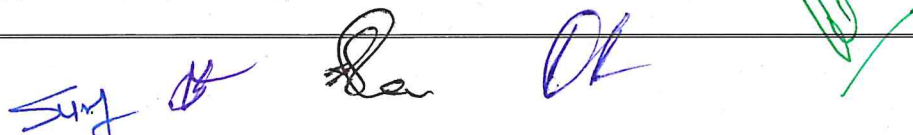
Measurement Scale: Scales used in pulmonary rehabilitation: Becks Depression Inventory (BDI) and Hamilton Anxiety Scale (HAS);mni- mental state examination, SGRQ,CRQ,SF 36,CAT,Activities-specific balance scale (ABC) etc.

PULMONARY REHABILITATION

1. Overview of pulmonary rehabilitation
2. Assessment of the pulmonary rehabilitation patient
3. Outcome measures in pulmonary rehabilitation
4. Patient education and skill training
5. Exercise assessment and training
6. Disease-specific approaches in pulmonary rehabilitation
7. Program management

Airway Clearance Techniques: physiological basis, Procedure, Indications, Contraindications,procedure, Physiological effects, Mechanism of action of the following.

- a) Percussion, Vibration, Shaking



- b) Postural Drainage
- c) Huffing and coughing
- d) Active Cycle of Breathing Technique
- e) Autogenic Drainage

2. Airway Clearance Technologies: Procedure, Indications, Contraindications, procedure, Physiological effects, Mechanism of action of the following.

- a) Vibratory PEP Devices: Acapella, Flutter,
- b) Non-Vibratory PEP Devices: Thera PEP
- c) High- Frequency chest wall oscillation
- d) PNF respiration

3. Breathing Exercises and Ventilator Training

- a) Diaphragmatic Breathing Exercise
- b) Segmental breathing exercise
- c) Pursed lip breathing
- d) Respiratory resistance training
- e) Glossopharyngeal Breathing
- f) Relaxation positions to control dyspnoea

4. Exercises to Mobilize Chest

- a) To mobilize one side of chest
- b) To mobilize upper chest and stretch the pectoralis muscles
- c) To mobilize upper chest and thorax

5. Ventilatory facilitatory techniques

- a) Positioning concerns
- b) Ventilatory and movement strategies
- c) Manual facilitation techniques
- d) Enhancing phonation skills

6. Exercise testing and training for cardiopulmonary dysfunctions

- a) Primary cardiopulmonary dysfunctions
- b) Secondary cardiopulmonary dysfunctions

7. Mobilisation and exercise

- a) Hazards of bed rest
- b) Oxygen transport and metabolic demand of patient
- c) Effects of mobilisation and exercise on oxygen transport
- d) Acute and long term effect of prescription of mobilization and exercise
- e) Mobilisation testing, monitoring and prescription

8. Body positioning

- a) Prescriptive versus routine body positioning
- b) Physiological effects of various body positions
- c) Physiological effects of frequent changes in body position

Sury *Pa* *OK* *28/4/22*

- d) Prescription of therapeutic body positions and body position changes
- e) Mechanical body positioning

FOR MPT (SPORTS) STUDENTS

MPT 304S- ADVANCES IN SPORTS PHYSIOTHERAPY ASSESSMENT & MANAGEMENT-I.

Course Description: The course covers topics related to Sport physiotherapy assessment, diagnostic procedure interpretation, measurement and therapeutic equipments use in managing different disorders affecting sports.

Course Objective: The course should equip the student to acquire in-depth knowledge in different physiotherapy assessment, measurement and therapeutic equipment used in management of different disorders affecting sports.

Course outcome: The student should be able to:

1. To perform a comprehensive and complete Physiotherapy assessment of various Sport injury patients.
2. To document systematic, meaningful, accurate written records of the patient.
3. To assess and eventually design individualized treatment strategies and measure outcome of intervention on measurement equipment for the sport injury patients.

EVALUATION & EXAMINATION:

Importance of evaluation & assessment. Methods of evaluation- interview, clinical examination, field test, reliability & validity of each test & investigative procedure. Evaluation of physical fitness. Musculoskeletal screening. Pre-participation Exam. On-Field and Off-Field Evaluation Process. Distance measuring devices, optical timers

KINANTHROPOMETRY IN SPORTS

Introduction to kinanthropometry. Evaluation techniques. Body composition. Somatotyping

SPORTS PHYSIOTHERAPY LAB MEASUREMENT INSTRUMENTS

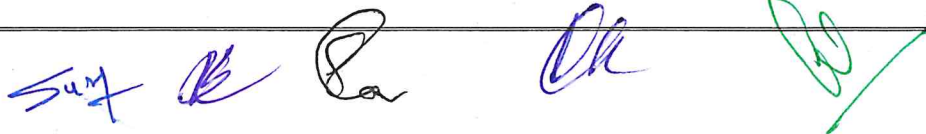
Goniometer, Accelerometer, Photo optical devices, Pressure transducers and force plates, Gait analyzer, Isokinetic device, EMG.

DOPING IN SPORTS

Banned drugs, Procedure of dope testing, Control of doping abuse

Exercise testing: incremental shuttle walk test, endurance shuttle walk test, six minute walk test, Step test, treadmill tests.(i.e. Balke, Bruce, Noughton, Modified Bruce protocol), interval bike test, sub maximal GXT, symptom limited GXT, exercise testing using cycle ergometer, oxygen uptake (VO₂)

SPORTS PHYSIOTHERAPY MANAGEMENT ON-FIELD MANAGEMENT OF SPORTS INJURIES



Use of First Aid Kit, AED, CPR , Stretchers, Kinesiotaping, Protective gears used in different sports. Cardio pulmonary Resuscitation; Shock management, Internal and External bleeding, Splinting, Stretcher use–Handling and transfer, Management of Cardiac arrest, Acute asthma, epilepsy, drowning, burn, Medical management of mass participation. Heat stroke and Heat illness.

NON CONTACT SPORTS INJURIES

Physiotherapy assessment and management of injuries related to specific sports: This includes the application of the above two sections to specific sports like the following:

1. Injuries related to Cricket
2. Injuries related to Running
3. Injuries related to Swimming
4. Injuries related to Volleyball
5. Injuries related to Tennis
6. Injuries related to Badminton
7. Injuries related to Gymnastics.

LIMITED CONTACT SPORTS INJURIES

Physiotherapy Assessment and management of injuries related to specific sports: This includes the application of the above two sections to specific sports like the following:

1. Injuries related to Football
2. Injuries related to Baseball
3. Injuries related to Basket ball
4. Injuries related to Hockey
5. Injuries related to Cycling

SEMI CONTACT SPORTS INJURIES

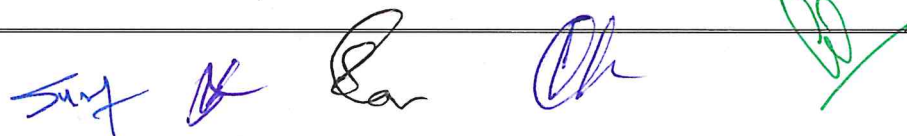
1. Injuries related to Karate
2. Injuries related to Kick Boxing
3. Injuries related to Chinese Martial Arts
4. Injuries related to Kalari Payattu
5. Injuries related to Judo

FULL CONTACT SPORTS INJURIES

1. Injuries related to Kabbadi
2. Injuries related to Handball
3. Injuries related to Australian Rules football
4. Injuries related to Taekwondo
5. Injuries related to Wrestling
6. Injuries related to Sumo
7. Injuries related to Boxing

FOR MPT (OBS & GYNAE) STUDENTS

MPT 304G- OBS & GYNAE PHYSIOTHERAPY ASSESSMENT & MANAGEMENT-I



Course Description: The course covers topics related to obstetric and gynaecology assessment, diagnostic procedure interpretation, measurement and therapeutic equipments use in managing different disorders affecting obstetric and gynaecological system

Course Objective: The course should equip the student to acquire in-depth knowledge in different physiotherapy assessment, measurement and therapeutic equipment used in management of different disorders affecting obstetric and gynaecological systems.

Course outcome: The student should be able to:

1. To perform a comprehensive and complete Physiotherapy assessment of various obstetric and gynaecological patients.
2. To document systematic, meaningful, accurate written records of the patient.
3. To assess and eventually design individualized treatment strategies and measure outcome of intervention on measurement equipment for the obstetric and gynaecological patients.

GENERAL ASSESSMENT IN OBSTETRICS

1. Pre conceptual assessment and investigation, Antenatal assessment
2. Pregnancy test and investigation
3. Assessment during labour
4. Postnatal assessment

SPECIFIC ASSESSMENT IN OBSTETRICS

1. Assessment of common musculoskeletal impairment in Pregnancy
2. Assessment of soft tissue and muscular changes (Diastasis recti, Ligaments etc)
3. Assessment of pelvic floor muscles
4. Assessment of bowel and bladder impairment

GENERAL ASSESSMENT IN GYNAECOLOGY

1. Assessment of different physical impairment in gynecological condition
2. Assessment of edema and pain
3. Assessment of Pelvic girdle
4. Physiotherapy outcome measure tools in gynecological condition

SPECIFIC ASSESSMENT IN GYNAECOLOGY

1. Pre and post assessment of different gynecological surgical condition
2. Breast examination
3. Assessment of Uterine prolapse
4. Assessment of spinal curvature

MISCELLANEOUS ASSESSMENT

1. Height, Weight, Hip and waist, Neck measurement
2. Cardiorespiratory fitness and its assessment
3. Pre and post natal Gait and posture assessment

Sug K Pan

[Signature]

4. Pre and post natal neurovascular assessment

MEASUREMENT INSTRUMENTS AND TOOLS

Indication reliability and validity of different Scales used for different impairments and outcome for intervention in Obstetrics & Gynecology physiotherapy

TREATMENT INSTRUMENTS (Therapeutic effects, Indication, contra indication, Precaution, Method of application, doses and level of evidence of various physiotherapy intervention for management of various physical impairment related to Obs Gynae condition)

Therapeutic modalities

1. Superficial and deep heat therapy
2. Cryotherapy
3. Various types of current
4. Pneumatic compression devices
5. Low high and medium frequency currents
6. EMG
7. Recent advancement in therapeutic modalities
8. Vaginal cone
9. Vaginal tube
10. Pelvic floor stimulators
11. Biofeedback devices for pelvic floor muscles.
12. Ultraviolet therapy for the New Born.
13. IR Lamp

Therapeutic Exercise

1. Strengthening
2. Flexibility
3. Proprioceptive
4. Postural exercises
5. Kegel Exercises
6. Weight reduction exercises

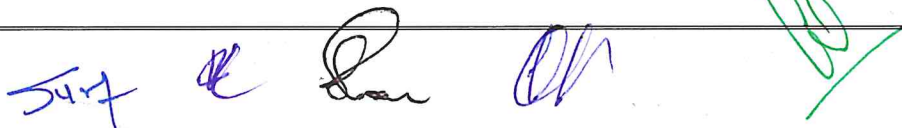
Manual Therapy techniques

1. MET, PNF
2. Joints and soft tissue mobilization techniques
3. NMT

Special and integrated Techniques

Special and integrated techniques use in Obs Gynae physiotherapy.

Psycho social and physical therapies: Individual therapy, Behavioural Therapy- Heartfulness Relaxation therapy, cognitive therapy, positive- negative reinforcement, bio-feedback, guided imagery, ab-reactive therapy, Group Therapy, Family Therapy, Milieu Therapy, The Therapeutic Community, Occupational therapy, Recreational therapy, Play therapy, Music therapy, Light therapy, Color therapy, Aroma therapy



PRACTICALS

MPT 303P ELECTIVE- 3 - ADVANCES IN PHYSIOTHERAPY ASSESSMENT & MANAGEMENT – ORTHO/ NEURO/ CARDIO/ SPORTS/ OBS & GYN.

This involves application of topics in PAPER MPT 303 via demonstrations, field visits and case presentations.

MPT 304P DISSERTATION

As part of the requirement for the Master's degree the student is required to undertake a research study under the guidance of a guide. Oral Presentations at Conferences/Seminars. Students must publish/present at least one research paper at a National Level Conference/ International Level Journal. The student needs to publish at least one research paper in any indexed journal.

MPT 305 CLINICS & SEMINARS

These will serve as a platform for students to integrate various components of patient management. Students will give presentations on topics provided to them. Students will engage in clinical Physiotherapy Department to enhance their clinical skills and apply theoretical knowledge gained during teaching sessions.

Surj k Pa PA

BB

FOURTH SEMESTER

Course No.	Title	Total Hours	Hours/week	Credits	IA Marks	SE Marks	Total Marks
MPT 401	Teaching Methodology in Physiotherapy	50	2	4	25	75	100
MPT 402	Ethical Legal & Professional Issues	50	2	4	25	75	100
MPT 403	Elective-4	50	2	4	25	75	100
MPT 403P	<i>Practical- I Elective 4</i>	50	2	2	25	75	100
MPT 404P	Practical II Dissertation	100	4	4	25	75	100
Total		300	12	18	175	525	700
MPT 406	Clinics & Seminars Presentations	250	6	6	50	50	100
Grand Total		550	18	24	225	575	800

Elective-4 MPT

MPT 403O	Advances in Orthopaedic Physiotherapy Assessment & Management-II	50	2	4	25	75	100
MPT 403N	Advances in Neuro Physiotherapy Assessment & Management-II	50	2	4	25	75	100
MPT 403C	Advances in Cardio pulmonary Physiotherapy Assessment & Management-II	50	2	4	25	75	100

MASTERS OF PHYSIOTHERAPY PROGRAM-ORDINANCE-REGULATIONS-SYLLABUS 2021-22 ONWARDS

MPT 403S	Advances in Sports Physiotherapy Assessment & Management-II	50	2	4	25	75	100
MPT403 G	Advances in Obs & Gynae Physiotherapy Assessment & Management-II	50	2	4	25	75	100

Sury *R* *San* *Da* *Da*

MPT401- TEACHING METHODOLOGY IN PHYSIOTHERAPY

Course Description: The course covers topics related to teaching methodology and practical of teaching in physiotherapy.

Course Objective: On completion of the course the student should be able to understand the dynamics of teaching & learning, plan effective teaching sessions in physiotherapy.

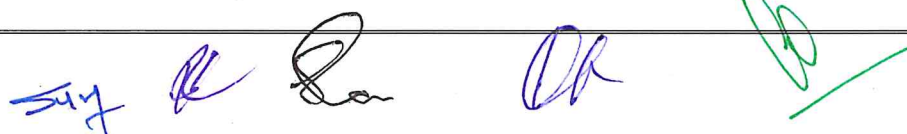
Course Outcome: The student should be able to demonstrate adequate knowledge and skill in physiotherapy teaching and learn ways to effectively teach to physiotherapy undergraduate students.

1. Method and techniques of teaching
 - i. Lecture, Demonstration
 - ii. Discussion, Seminar, Assignment, Project and Case Study.
2. Planning for Teaching
 - a. Bloom's Taxonomy of Instructional Objectives, Writing Instructional Objectives in Behavioural terms, Unit Planning and Lesson Planning.
3. Teaching Aids
 - a. Types of teaching aides
 - b. Principles of selection, preparation, and Use of Audio –Visual aids.
4. Measurement and evaluation
 - a. Nature of Educational Measurement : Meaning, Process, Types of tests.
 - b. Construction of an achievement test and analysis standardized test.
 - c. Introduction of some standardized tools, important tests of intelligence, Aptitude, Personality.
 - d. Continuous and Comprehensive Evaluation.
5. Guidance and Counseling
 - a. Meaning and Concepts of Guidance and Counseling
 - b. Principles
 - c. Guidance and Counseling services of students and faculty members
 - d. Faculty development and development of personnel for P.T. Services
6. Clinical Education
 - a. Awareness and Guidance to the Common people about Health and Diseases and Available professional Services
 - b. Patient Education
 - c. Education of the Practitioners

MPT402- ETHICAL LEGAL AND PROFESSIONAL ISSUES

Course Description: The course covers topics related to physiotherapy ethics, medico-legal laws, professional laws and issues in India and abroad.

Course Objective: On completion of the course the student should be able to understand the basic issues of practice as an informed professional on Legal & ethical issues.



Course Outcome: The student should be able to demonstrate adequate knowledge of ethics, medico-legal laws, professional laws and issues in India and abroad and demonstrate ethical behaviors in practice.

PHYSIOTHERAPY PROFESSION

Physical therapy: Definition and development, Historical perspective, Physiotherapy verses medical model of practice, Various categories for movement dysfunction, Preferred practice patterns in Physiotherapy, Today's health care model.

ETHICAL CONSIDERATIONS

Values and valuing, The values of patient as a factor in care, The influence of the values on the primary goal of patient care, Value – Laden situation in rehabilitation, Code of ethics, Rules of professional conduct, Code of ethics: A wider knowledge of ethics relating to current social and medical policy in the provisions of health care.

LEGAL CONSIDERTAIIONS

Acts & Statutes relating to Physiotherapy. Legal responsibility of Physiotherapists for their actions in the professional context and understanding the physiotherapist liability and obligations in the case of medical legal action. Guideline for Physiotherapy Documentation- Introduction, Documenting the examination, Documenting the evaluation, Documenting the plan of care, Application of documentation skills. Examples of Medico-legal cases related to physiotherapy.

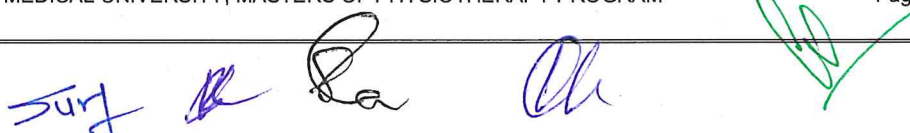
PROFESSIONAL ISSUES

Functions of the relevant professional associations, education body and trade union. The role of the international health agencies such as the world health organizations. Standards of practice for physical therapies. Current issues

Elective-4 MPT

The student may choose from anyone options from the list of Program Elective combinations provided in the table below.

MPT 403O	Advances in Orthopaedic Physiotherapy Assessment & Management-II	50	2	4	25	75	100
MPT 403N	Advances in Neuro Physiotherapy Assessment & Management-II	50	2	4	25	75	100
MPT 403C	Advances in Cardio pulmonary Physiotherapy Assessment & Management-II	50	2	4	25	75	100
MPT 403S	Advances in Sports Physiotherapy Assessment & Management-II	50	2	4	25	75	100

Surj R Sa Dh 

MPT403 G	Advances in Obs & Gynae Physiotherapy Assessment & Management-II	50	2	4	25	75	100
-------------	--	----	---	---	----	----	-----

MPT 4030- ADVANCES IN ORTHOPAEDIC PHYSIOTHERAPY ASSESSMENT & MANAGEMENT-II

Course Description: A study of the relationship of human behavior and ergonomics as applied to workplace safety.

Course Objectives: Upon completion of the course the student will be able to: 1. Explain the psychology of human behavior as it relates to workplace safety. 2. Identify ergonomic hazards; recommend appropriate controls. 3. Relate the human and workplace factors which contribute to ergonomic hazards.

Course Outcomes: Explain the psychology of human behavior as it relates to workplace safety; identify ergonomic hazards; recommend appropriate controls, and relate the human and workplace factors which contribute to ergonomic hazards.

INTRODUCTION

1. What is Ergonomics? Human Factors and Ergonomics
3. Application of Ergonomics
4. Brief History of Ergonomics
5. Effectiveness and Cost-Effectiveness of Ergonomics

SYSTEMS OF THE HUMAN BODY

1. Anatomy of Spine and Pelvis Related to Posture
2. Biomechanics
3. Muscular System
4. Ergonomics and the Musculoskeletal System
5. Costs of Back Injuries

MUSCULAR WORK AND NERVOUS CONTROL OF MOVEMENTS

1. Types of Muscular Work
2. Muscular Fatigue
3. Types of Muscle Contractions
4. Measurement of Muscular Strength
5. End of chapter exercises

ANTHROPOMETRY

1. What is Anthropometry?
2. Terminology
3. Myth of the Average Human
4. Principles of Universal Design
5. Anthropometric Measurements

DESIGN OF WORKPLACES AND HAND TOOLS

1. Work Design Analysis
2. Designing for Hand Use
3. Types of Injuries and Disorders

WORK-RELATED MUSCULOSKELETAL DISORDERS

1. Types of Work-Related MSD's
2. Task-related Factors
3. Personal Risk Factors
4. Impact on Industry
5. Ergonomic Program for WMSD's

HEAVY WORK AND EVALUATING PHYSICAL WORKLOADS AND LIFTING

1. Heavy Work
2. Manual Material Handling & Lifting
3. Classification and Risks
4. NIOSH Lifting Guidelines
5. Job Demands and Workplace Stress
6. Mental Fatigue/Shiftwork Fatigue

INFORMATION ERGONOMICS, CONTROLS, AND DISPLAYS

1. Mental Workload Measurement
2. Primary and Secondary Task Performance
3. Controls and Displays (Types)
4. Control Layout and Design

Surf R Sa OA
28/4/22

HOW TO IMPLEMENT AN ERGONOMIC PROGRAM

1. Management and Employee Involvement
2. Setting Up the Ergonomics Program
3. Problem Identification
4. Hazard Prevention and Control
5. Training

MPT 403N- ADVANCES IN NEURO PHYSIOTHERAPY ASSESSMENT & MANAGEMENT-II

Course Description: The course covers topics on various schools of thoughts of neurological therapy techniques and physiotherapy intervention in various types of paediatric neurologic diseases and mental health disorders. The course aims to provide a more functional and comprehensive approach to manage a range of neurological conditions.

Course Objective: The course should enable the student to acquire in-depth understanding and skill in managing paediatric neurological diseases and mental health conditions by using various type of physiotherapeutic techniques and alternatives.

Course Outcome: The student should be able to compare & contrast the outcome of various neurological therapy approaches in paediatric and mental health conditions.

NEURO PHYSIOTHERAPY IN PAEDIATRICS

Assessment and evaluation

1. Growth and Development of the child
2. Examination and evaluation:
3. Neurodevelopmental screening (Paediatric neurological assessment, including reflex assessment and Milestones)
4. Assessment and evaluation of balance and fitness
5. General Scales and assessment of paediatric conditions: APGAR score, functional reach test, Gross motor function measure, Infant developmental screening scale, Infant motor screen, leg length discrepancy tape measure, neonatal oral motor assessment scale, six minutes walk test, oral motor feeding rating scale, timed up and go, visual analog scale.
6. Paediatric scale specific assessment of various neurological conditions.
7. Disability evaluation of the child
8. Recent advances in the assessment and scales in paediatric

PAEDIATRIC CONDITIONS

Congenital and acquired neurological problems in children and its medical and surgical management:

Cerebral palsy,
Spina bifida,
Muscular dystrophy,
Head injury,
Brachial plexus injury,
Developmental disorders,
Peripheral nerve injury,

Mental Retardation,
Poliomyelitis,
Brain tumors,
Spinal cord injury,
Hydrocephalus,
Neuromuscular disorders,
Encephalitis,
Meningitis,
Guillain-Barré syndrome (GBS) ,
Acute hemiplegia of childhood, Ataxia,
Developmental coordination Disorder

MENTAL HEALTH AND PHYSIOTHERAPY

Recommendation for mental health care of the World Health Organisation adapted by the IOPTMH

The scope of physiotherapy in mental health.

Physical health related approach.

Psychosocial related and psychophysiological approaches.

Psychotherapeutic oriented physiotherapy approach.

The content of physiotherapy in mental health.

Psychomotor therapy with children and adolescents.

Norwegian psychomotor physiotherapy.

Relaxation therapy and mind body related approaches.

Psychomotor physiotherapy for severe mental health problems.

Basic body awareness methodology.

Psychosomatic physiotherapy approach.

Exercise and physical activity in mental health.

Physiotherapy with the elderly in old age psychiatry

FOR MPT (CARDIO) STUDENTS

MPT 403C- ADVANCES IN CARDIO PULMONARY PHYSIOTHERAPY ASSESSMENT & MANAGEMENT-II

Course Description: The course covers topics related to cardiopulmonary physiotherapy assessment, diagnostic procedure interpretation, measurement and therapeutic equipments use in managing different disorders affecting cardiopulmonary systems.

Course Objective: The course should equip the student to acquire in-depth knowledge in different physiotherapy assessment, measurement and therapeutic equipment used in management of different disorders affecting the cardiopulmonary system.

Course outcome: The student should be able to:

1. To perform a comprehensive and complete Physiotherapy assessment of various cardiopulmonary patients.
2. To document systematic, meaningful, accurate written records of the patient.
3. To assess and eventually design individualized treatment strategies and measure outcome of intervention on measurement equipment for the cardiopulmonary patients.

PHYSIOTHERAPY IN CRITICAL CARE

Effect of positioning and mobilization

Intensive care for the critically ill adults and pediatrics.

Mechanical ventilation- indications, modes, complications, weaning, non conventional modes and alternative modes of ventilation.

Management of patients with neurological disorders- spinal cord injury, head injury, muscular dystrophy.

Effects of physical training and cardiac rehabilitation

Pulmonary rehabilitation

Cardiac rehabilitation

Intensive care for critically ill patients

1. Assessment of critically ill patient: introduction, medical and chart interview with patients and family, physical examination, neurological system; cardiovascular system; respiratory system; renal system; haematological/immunological system; gastrointestinal system; musculoskeletal system
2. Treatment of acute respiratory conditions: airway clearance techniques; weaning from mechanical ventilation; positioning; breathing exercises; patient education; paediatric consideration.
3. Non-invasive ventilation: berating sleep and respiratory failure; indication for non invasive ventilation; practical issues in the application of non invasive ventilation; non-invasive ventilation in children
4. Physiotherapy intervention during non-invasive ventilation
5. Implication for physiotherapy in mechanically ventilated patients: intubation weaning
6. Musculoskeletal problems
7. Patient groups with specific needs: e.g. systemic inflammatory syndrome, sepsis, ARDS, inhalation burn, trauma, neurological conditions requiring intensive care
8. Physiotherapy techniques used in intensive care: gravity assisted, manual or mechanical hyperinflation, suctioning of intubated patients, manual techniques, intermittent positive pressure berating, periodic continuous positive pressure ventilation
9. Defibrillators & Cardiopulmonary resuscitations

FOR MPT (SPORTS) STUDENTS

MPT 404S- ADVANCES IN SPORTS PHYSIOTHERAPY ASSESSMENT & MANAGEMENT-II

Course Description: The course covers topics related to Sport training assessment, and equipments use in assessing and managing different disorders affecting sports.

Course Objective: The course should equip the student to acquire in-depth knowledge in different fitness assessments, measurement and therapeutic equipment used in management of different disorders affecting sports.

Course outcome: The student should be able to:

1. To perform a comprehensive and complete Physiotherapy & fitness assessment of various athletes and Sport injury patients.
2. To document systematic, meaningful, accurate written records of the patient.
3. To assess and eventually design individualized treatment strategies and measure outcome of intervention on measurement equipment for the sport injury patients.

SPORTS TRAINING

Physiological Basis and Principles of Training and Conditioning

- a. Principles of endurance and strength training i. Recovery training intensities in heart rate ii. Manipulation of training principles iii. Training sub-phases
- b. Fundamentals that aid training and performance i. Warm up and Cool down ii. Flexibility and stretching
- iii. Missing workouts iv. Overtraining
- c. Analysis of Training

Misc. Topics

High Altitude Training, Sports Diving, Hazards of underwater environment. Special Aids to Athletic Performance:- MORA, Oxygen Inhalation, Sleep., Sex and performance. Assessment of Age. Muscle tissue fibre typing and its significance. Exercise for mood enhancement & anxiety.

Periodization

Planning: Principles, need and importance of planning, Types of plan (training conception, macro, micro, meso and training session plan), Annual Training Program, phases and characteristics, psychological supercompensation, Periodization of strength training, speed and endurance, Periodization for Injury Prevention and Surveillance.

Peaking for Competitions, Factors facilitating peaking during competition,

Technical preparation:

Definition and meaning of technique, skill and style, Technique training & its implication in various phases; methods employed for technique training, causes of technical fault and their correction, Definition and meaning of tactics, aim of tactics according to sport.

Long Term Athlete Development: Stages of Athletic Development: Generalized and Specialized training, Olympic Cycle: classification of Olympic cycle plan and compiling an Olympic cycle Plan Talent Identification: Methods, Criteria, Factors and Phases of Talent Identification

Precision Heart Rate Training

Heart rate monitoring and training, Training in heart zones, Precision heart rate training for specific sports, Multi Activity training, Monitoring of training effects

Temperature Regulation

- a. Heat Balance
- b. Methods of Assessing Heat Balance.
- c. Effects of Climate.
- d. Effects of Exercise on Temperature Regulation.
- e. Limit of Tolerance of Heat.
- f. Acclimatisation.
- g. Avoidance in Heat illness during exercise.
- h. Exercises in the cold.

SPECIAL AND INTEGRATED TECHNIQUES

Special and integrated techniques use in sport physiotherapy. Dynamic Exercises, Plyometric Exercises, Isokinetic Exercises, Manipulative Techniques, Kinetic chain exercises, Aquatic therapy in sports, Neuromuscular Training: Neuromuscular control, methods for improving neuromuscular control, proprioception and Kinesthetic sensation following different sport injuries. Principles and application of neuromuscular facilitation techniques including PNF in sports. Health club & fitness: Concept, group therapy.

FITNESS:

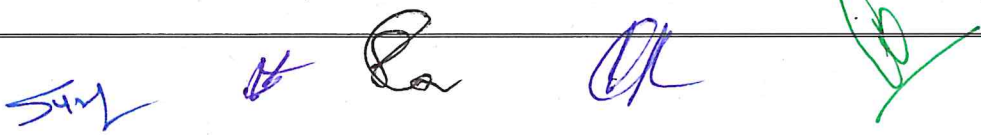
1. Definition, aspects and parameters for testing.
2. Fitness Business and Entrepreneurship
6. Personal Training
7. Fitness Appraisal and Testing

CURRENT ISSUES IN SPORTS PHYSIOTHERAPY

1. Dry needling
2. Kinesio taping.
3. Tai-Chi and Power Yoga
4. Soft Tissue Manipulations in Sports.
5. Other Recent methods in sports Rehabilitation

NUTRITION & DIETETICS

1. Six nutrient classes: carbohydrates, fats, proteins, Vitamins, minerals and water. water & electrolyte balance
2. Body weight; body composition
 - Body build, body size & body composition



- Assessing body composition
- Body composition & sport performance
- Weight standards
- Achieving optimal weight

3. Diet & fitness products

4. Exercise & diet programme to gain weight

- Gaining body fat
- gaining muscle mass

5. Guidelines for healthy diet

c. Optimal Nutrition for exercise. Nutrition for Physical Performance. Pre-Game meal, Carbohydrate loading. f. Alcohol, Mega Vitamin Therapy.g. Food for various athletes of different disciplines.h. Fluid and energy replacement in prolonged exercise. i. AHA Dietary guidelines for Heart diseases.

SPORTS PSYCHOLOGY

Introduction to sport psychology: What is sport psychology, A brief history of sport psychology What is a sport psychologist? Action-Theory Approach to Applied Sport Psychology

Personality and sport : Introduction, Trait theories, Eysenck's theory, Cattell's theory. Other measurable personality variables-Sensation seeking, Telic dominance. Applying trait and narrow-band theories to sport: Distinguishing athletes from non-athletes, Distinguishing successful from unsuccessful athletes, Personality and choice of sport, Evaluation of the trait and narrow-band approaches. Situational and interactional approaches. Applying the interactional model to sport-Profiling moods, Evaluation of the interactional approach, Social learning theory. Applying social learning theory to sport-Patterns of sport-related behavior, Athletes as role models, Acquiring love of sport, Evaluation of social learning theory.

Attitudes to sport: The nature of attitudes-The functional approach, The structural approach, Applications of the structural approach to sport. Measuring attitudes- Likert scales, Semantic differential scales, Thurstone scales. The formation of attitudes to sport- Personality, genetics and attitudes. Social learning of attitudes. Attitudes to competition- Direct experience and attitudes, What are children's attitudes to sport? Attitudes to sport and sporting behavior- Evaluation of the TRA. Changing people's attitudes to sport-Cognitive dissonance, Evaluation of cognitive dissonance theory, Self-perception theory, Evaluation of self-perception theory

Aggression in sport: Defining aggression-Hostile aggression, instrumental aggression and assertiveness. Sanctioned and unsanctioned aggression. The link between aggression and performance. Theories of aggression- Instinct theories, Evaluation of

the instinct approach, Social learning theory, Evaluation of social learning theory, The frustration-aggression hypothesis, Evaluation of the frustration-aggression hypothesis. Conclusions. Situational factors affecting aggression in sport. Does sport increase or reduce aggression? Effects on spectators. The reduction of aggression-Punishment, Catharsis, Role modeling, Contracting, Anger-management groups.

Arousal, anxiety and stress: Definitions of arousal, anxiety and stress-somatic and cognitive anxiety, state and trait anxiety. Factors inducing anxiety and stress-situational factors, event importance, expectations, uncertainty. Individual factors -trait anxiety, self-esteem and self-efficacy. The relationship between arousal and performance. Drive theory- evaluation of drive theory, inverted u hypothesis, evaluation of inverted u hypothesis. the relationship between anxiety and performance-the catastrophe model evaluation of the catastrophe model, zones of optimal functioning, evaluation of the zof theory. Stress management-relaxation techniques, biofeedback, progressive muscle relaxation. Cognitive-behavioural techniques-goal-setting theory, evaluation of goal-setting theory. Imagery techniques-mental rehearsal.

Social influences on sporting behavior: Sources of social influence-Coaching and socialization, Culture and socialization, Sport as a socialising agent. Groups and teams-Defining groups and teams, Group formation, Group cohesion, What determines team cohesion?, Cohesiveness and performance, Developing team cohesion. Social facilitation- Co-action and audience effects, Explanations for co-action and audience effects- Drive theory, evaluation of drive theory, evaluation-apprehension theory, evaluation of evaluation-apprehension theory. social loafing. groupthink. leadership-leadership style, theories of leadership, trait theories, evaluation of trait theories, fiedler's contingency theory, evaluation of fiedler's theory. summary. Who cares what other people think? Self-presentation in exercise and sport

Motivation and sport: Intrinsic and extrinsic motivation. Humanistic perspectives on motivation -Maslow's theory of needs, Evaluation of Maslow's theory. Achievement-motivation-The McClelland-Atkinson theory of need achievement, Evaluation of McClelland and Atkinson's theory, Fear of success, Evaluation of FOS theory. Cognitive approaches to motivation-Attribution, Internal and external attributions, Weiner's model of attribution, Evaluation of Weiner's model, Learned helplessness and reattribution training, Self-efficacy, Evaluation of the self-efficacy construct. Contemporary research on motives for sports participation. Summary. the psychology of superior sport performance:a cognitive and affective neuroscience perspective

Skill acquisition: Skills and abilities- definitions, classifying abilities, evaluation of the ability construct. classifying skills-gross and fine skills, open and closed skills, discrete, continuous and serial skills, external and internally paced skills. stages of skill acquisition- the cognitive stage, the associative stage, the autonomous stage, evaluation of the three-stage model. the information-processing approach to skills-evaluation of welford's model. memory -anderson's model of memory. evaluation of anderson's theory. theories of motor learning-closed loop theory, evaluation of closed loop theory, schema theory, evaluation of schema theory. enhancing skill acquisition-

practice, massed and distributed practice, whole and part practice, physical and mental practice, guidance, feedback. mental skills training in sport

Special topics: Eating disorders in sport. psychosocial antecedents of sport injury and interventions for risk reduction. psychology of sport injury rehabilitation. gender and cultural diversity, athletes with disabilities, alcohol and drug use among athletes: prevalence, etiology, and interventions.

FOR MPT (OBS & GYNAE) STUDENTS

MPT 404G- ADVANCES IN OBS & GYNAE PHYSIOTHERAPY ASSESSMENT & MANAGEMENT-II

Course Description: The course covers topics related to obstetric and gynaecology assessment, diagnostic procedure interpretation, measurement and therapeutic equipments use in managing different disorders affecting obstetric and gynaecological system

Course Objective: The course should equip the student to acquire in-depth knowledge in different physiotherapy assessment, measurement and therapeutic equipment used in management of different disorders affecting obstetric and gynaecological systems.

Course outcome: The student should be able to:

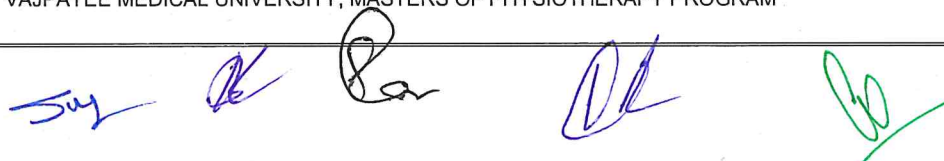
1. To perform a comprehensive and complete Physiotherapy assessment of various obstetric and gynaecological patients.
2. To document systematic, meaningful, accurate written records of the patient.
3. To assess and eventually design individualized treatment strategies and measure outcome of intervention on measurement equipment for the obstetric and gynaecological patients.

PT INTERVENTION FOR NEURO MUSCULOSKELETAL DYSFUNCTION IN OBSTETRICS

1. Back and neck pain, CTS
2. SI and Hip pain, Heel pain
3. Knee pain and Osteoporosis
4. Diastasis recti and Diastasis symphysis pubis

PT INTERVENTION FOR VASCULAR DYSFUNCTION IN OBSTETRICS

1. Varicose Vein
2. Superficial vein thrombosis and deep vein thrombosis
3. Pulmonary oedema and embolism



4. Haemorrhoids

PT INTERVENTION FOR PELVIC FLOOR DYSFUNCTION

1. Levator ani syndrome, Coccygodynia,
2. Pudendal Neuralgia, Incontinence, Overactive bladder
3. Anismus, Vaginismus and vulvodynia, Dyspareunia
4. Electrotherapeutic modalities used in pelvic floor muscle training

PT INTERVENTION IN POST SURGICAL CONDITION

1. PT management of C section
2. PT management of episiotomy
3. PT management of hysterectomy
4. PT management of normal delivery and other gynecological surgery
5. Post natal physiotherapy

PSYCHOLOGICAL CONDITION IN OBSTETRICS

1. Maternal blues
2. Depression in pregnancy
3. Psychosis and sexual problems
4. Anxiety and bipolar mood disorder

MISCELLANEOUS TOPIC

1. Breast milk, its advantages, Breastfeeding positions, Common problem in Breastfeeding
 2. Breast engorgement and its PT management, Types of nipples and its problems.
- Antenatal classes, Aerobic and Anaerobic training, Swiss ball in Pregnancy, Weight training.

PRACTICALS

MPT 403P ELECTIVE- 4 - ADVANCES IN PHYSIOTHERAPY ASSESSMENT & MANAGEMENT –II (ORTHO/ NEURO/ CARDIO/ SPORTS/ OBS & GYN).

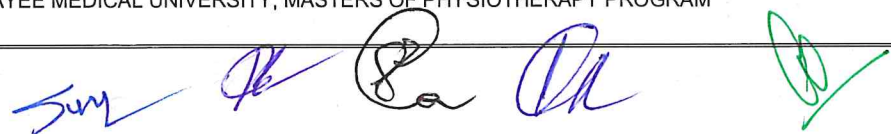
This involves application of topics in PAPER MPT 303 via demonstrations, field visits and case presentations.

MPT 404P DISSERTATION

As part of the requirement for the Master's degree the student is required to undertake a research study under the guidance of a guide. Oral Presentations at Conferences/Seminars. Students must publish/present at least one research paper at a National Level Conference/ International Level Journal. The student needs to publish at least one research paper in any indexed journal.

MPT 405P CLINICS & SEMINARS

These will serve as a platform for students to integrate various components of patient management. Students will give presentations on topics provided to them.



Students will engage in clinical Physiotherapy Department to enhance their clinical skills and apply theoretical knowledge gained during teaching sessions

LIST OF RECOMMENDED BOOKS- M PT

Exercise Physiology and Electrophysiology		
S.N	Author	Title
1	Katch	Exercise Physiology
2	Skinner,J.S	Exercise Testing & Exercise Prescription For Special Cases
3	Khandpur, R.S	Hand book of Biomedical Instrumentation
4	Glaser,Roland	Biophysics
5	Prentice William	Therapeutic Modalities in Rehabilitation
6	Robinson,A.J	Clinical Electrophysiology
7	Gersh,M.R	Electrotherapy in Rehabilitation
8	Robertson Val	Electrotherapy Explained principle and practice
9	Nelson ,Roger M	Clinical Electrotherapy
10	Kimura, Jun	Electrodiagnosis in Diseases of Nerve & Muscle: Principles & Practice
11	Stokes, Maria	Physical Management in Neurological Rehabilitation
12	Michlovitz,S.L	Modalities for Therapeutic Intervention
Biomechanics		
S.N	Author	Title
1	Ackland Timolthy	Applied Anatomy and Biomechanics in Sports
2	Bell, Frank	Principles of Mechanics & Biomechanics

Surya *K* *Se* *M*

28/4/22

3	Raj Kumar,R.V	Biomechanics the Nucleus of Physiotherapy
4	Koley,S	Textbook of Biomechanics
5	Nordin, Margareta	Basic Biomechanics of the Musculoskeletal system
6	Griffith's IW	Principles of Biomechanics & Motion Analysis
7	Hall,Susan J	Basic Biomechanics
8	Smith, Laura K.	Brunnstrom's Clinical Kinesiology
9	Thompson,D.L	Hands Heal Communication,Documentation
10	Kapandji, I.A	The Physiology of The Joint Vol-1
11	Kapandji, I.A	The Physiology of The Joint Vol-2
12	Kapandji, I.A	The Physiology of The Joint Vol-3
13	Norkin C.C	Joint Structure and Function
14	Mathur, D.S	Elements of Properties of Matter
15	Mow,V.C	Basic Orthopaedic Biomechanics
16	Lennox Hoyte, Margot Damaser	Biomechanics of the Pelvic Floor

Management Administration and Ethics

S.N	Author	Title
1	Bhardwaj,Pradeep	Opportunities in Hospital & Health care Administration
2	Gupta,Jaydeep Das	Hospital Administration & Management A Comprehensive Guide
3	Francis,C.M	Hospital Administration
4	George,M.A	The Hospital Administration
5	Gupta,Shakti	Hospital store Management

Handwritten signatures and initials in blue and green ink at the bottom of the page.

6	Gupta,Shakti	Hospital and Health care Administration
7	Joshi,D.C	Hospital Administration
8	Kulkarni,G.R	Financial Management for Hospital Administration
9	Sakharkar,B.M	Principles of Hospital Administration & Planning
10	Jand,SS	Sphy The Beginning Ignite Yourself for Success
11	Joshi,S.K	Quality Management in Hospitals
12	Wolpert, Lewis	Health care Administration
13	Khan,S.M	Sana's Guidelines for Hospital infection control
14	Tabish,Syed	Hospital and Nurshing Homes Planning Organisations and Management
15	Dave,P.K	Emergency Medical Services & Disaster Management
16	Golwalia, Aspi F.	Medical Informatic 20/20
17	Bhuiyan, S.P	The Art of Teaching Medical Students
18	Franil, P	People Manipulation A Positive Pppracah
19	Mogli,G.D	Medical records organization and Management
20	Raja, Kavitha	Ethical Issues : Perspectives for the Physiotherapists
21	Levoy,BOB	222 Secrets of Hiring Managing and Retaining Great Employees in Healthcare Practices
22	Thompson,D.L	Hands Heal Communication,Documentation
23	Dimiond,Bridgit	Legal Aspects of Physiotherapy
24	Wolfe, Brent D	Team Building Activities for the Digital Age
25	Francis,C.M	Medical Ethics
26	Wood, David	Communication for Doctors
27	Gupta,Shakti	Modern trend in Planning and Designing of Hospitals

Research Methodology, Biostatistics, Evidence Based Practice

1	Kothari, C.R.	Research Methodology Methods and Techniques
2	Singh, Sunita	Synopsis of Biostatistics
3	Prasad,S	Elements of Biostatistics
4	Pitney W.A	Qualitative Research in Physical Activity
5	Jewell,D.V	Guide to Evidence Based Physical Therapists Practice
6	Herbert,Rob	Practical Evidence Based Physiotherapy
7	Bhandri,Mohit	Clinical Research made Easy
8	Verma, B.L	Biostatistics
9	Campbell,M.J	Medical statistics

Pedagogy & Teaching Methodology

S.N	Author	Title
1	Ram,C.S	Pedagogy Physiotherapy Education
2	Grechus, Marilyn	Innovative Tools for Health Education
3	Mohanty S	Golden 1000 MCQ for Physiotherapy Vol-1

Electrotherapy


S.N	Author	Title
1	Khandpur, R.S	Hand book of Biomedical Instrumentation
2	Glaser,Roland	Biophysics
3	Prentice William	Therapeutic Modalities in Rehabilitation
4	Robinson,A.J	Clinical Electrophysiology
5	Gersh,M.R	Electrotherapy in Rehabilitation

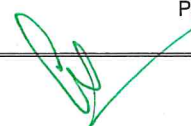
6	Robertson Val	Electrotherapy Explained principle and practice
7	Nelson ,Roger M	Clinical Electrotherapy
8	Kimura, Jun	Electrodiagnosis in Diseases of Nerve & Muscle: Principles & Practice
9	Stokes, Maria	Physical Management in Neurological Rehabilitation
10	Michlovitz,S.L	Modalities for Therapeutic Intervention

List of Recommended Books for MPT (ORTHOPAEDICS)

S.N	Author	Title
1	Brotzman,S. Brent	Clinical Orthopaedic Rehabilitation
2	Mckee,PAT	Orthotics in rehabilitation
3	Kotwal,Orakash	Text book of Orthopaedics
4	Maitland,Geoff	Maitland's Vertebral Manipulation
5	Lett, Ann	Reflex zone therapy for health
6	Dixon,M.W	Myofascial Massage
7	Edmond,Susan J	Joint Mobilization Manipulation
8	Ebnezar,John	Essential of orthopaedics for physiotherapists
9	Magee,D.J	Orthopedic physical assessment
10	Dutton,Mark	Orthopaedic Examination Evaluation
11	Joshi,Jayant	Essentials Of Orthopaedics
12	Weinsrein,S.L	Turek's Orthopaedic principles
13	Hoppenfeld,S	Orthopaedic Neurology

14	Golyakovsky V	Operative Manual of Ilizarov Technique
15	Natarajan, Mayil Vahanan	Textbook of Orthopaedics & Traumatology
16	Jiri Dvorak	Manual medicine Therapy
17	Tidswell	Cash's T.B of Orthopaedic Physiotherapy
18	Fortunato, N	Plastic and reconstructive surgery
19	Kulkarni,G.S	Recent Advanced Orthopaedics 2
20	Chaitow,Leon	Muscle Energy Techniques
21	Moore,Keith L	Clinical Oriented Anatomy
22	Donatelli,R.A	Orthopaedic Physical Therapy
23	Downie,P.A	Cash's text book of orthopaedics and rheumatology for physiotherapists
24	Chaitow,Leon	Positional Release Techniques
25	Duthie,R.B	Mercer's Orthopaedic Surgery
26	Ebnezar,John	Step by Step Injection techniques in orthopaedics
27	Starkey Chand	Examination of Orthopedic and Athletic Injuries
28	Wright,John M	Review Questions in orthopaedics
29	Singh, Parminder J	100 Cases in Orthopaedics and Rheumatology
30	Imhof, H	Direct Diagnosis in Radiology Spinal Imaging
31	Boyling,J.D	Grieve's Modern Manual Therapy
32	Culloch,J.M	Macnab's Backache
33	Demeter,S.L	Disability Evaluation
34	Hamblen,David L	Adams's Outline of Fractures

547 



35	Kelly,M.J	Orthopedic Therapy of the Shoulder
36	Donatelli,R.A	Physical Therapy of the Shoulder
37	Kitchen,Sheila	Electrotherapy Evidence Based
38	Aggarwal,A.L	Clinical practice of acupuncture
39	Hopwood Val	Acupuncture in Physiotherapy
40	Jull	Segmental Stabilization of Spine

List of Recommended Books MPT (Neurology)

S.N	Author	Title
1	Adler S.S	PNF in Practice an Illustrated
2	Campbell,M	Rehabilitation for Traumatic Brain Injury
3	Bobath,Berta	Adult Hemiplegia
4	Burns,Yvonne	Physiotherapy and the Growing Child
5	Campbell,WW	Dejongs the Neurologic Examination
6	Shumway,Anne	Motor Control Translating Research into Clinical Practice
7	Downie,P.A	Cash's text book of Neurology for physiotherapists
8	Levitt	Treatment of Cerebral,Palsy and Motor delay
9	Raj,G.S	Physiotherapy in Neuro-Conditions
10	Herdman, S.J	Vestibular, Rehabilitation
11	Snell, Richards	Clinical Neuroanatomy for Medical Students
12	Webers,David O	Hand book of stroke
13	Jain, Shalu	Text book of Neuro Physiotherapy

14	Harvey, Lisa	Management of Spinal Cord Injuries: A Guide for Physiotherapists
15	Kliegman,R.M	Nelson Essential of Pediatrics
16	Mardsen,CD	Movement disorders vol-3
17	Pitt-Brooke	Rehabilitation of movement
18	Misra U.K	Clinical Neurophysiology
19	Bromley, Ida	Tetraplkegia and Paraplegia: A Guide for Physiotherapists
20	Cole,Beverley	Physical Rehabilitation outcome measure
21	Pierson,F.M	Principles andTechniques of Practice
22	Davies,P.M	Right in the Middle
23	Mehrotra,T.N	Parkinson's Disease and Movement Disorders
24	Patten,John	Neurological Differential Diagnosis
25	Taly,A.B	Neurorehabilitation Princilpes & Practice
26	Weiss,Susan	Hand Rehabilitation
27	Bertoti,D.B	Functional Neurorehabilitation
28	Umphrea,D.A	Neurological Rehabilitation
29	Carr, J	Neurological Rehabilitation
30	Edwards,Susan	Neurological physiotherapy
31	Cooper, RA	Whellchair Selection & Configuration
32	Mardsen,CD	Movement disorders vol-1&2
33	Potturi GS	Physiotherapy in Neurological Conditions

LIST OF BOOKS RECOMMENDED FOR MPT CARDIO

S.N	Author	Title
1	West,John B	Respiratory physiology the essentials
2	Deepak, S	Clinical Notes in Respiratory
3	Main,E	Cardiorespiratory Physiotherapy : Adults and Paediatrics
4	Smith, Mandy	Cash's Text book of Cardiovascular Respiratory Physiotherapy
5	Mitra,P.K	Hand book of practical chest physiotherapy
6	Pryor, J.A	Physiotherapy for respiratory and cardiac problems
7	Fardy,P.S	Cardiac Rehabilitation adult Fitness and exercise testing
8	Burns, SM	AACN Essentials of Critical Care Nursing
9	Corne,Jonathan	Chest X Ray Made Easy
10	Lilly,L.S	Braunwald's Heart Disease Review & Assessment
11	Sharis,Peter J	Evidence based cardiology
12	Goldberger, A.L	Clinical Electrocardiography
13	Hampton J.R	The ECG in Practice
14	John, Hampton	150 ECG Cases
15	Ketai L.H	Fundamentals of Chest Radiology
16	Irwin,Scot	Cardiopulmonary Physical Therapy
17	Mitra P.K	Hand book of Practical Chest Physiotherapy
18	Park, MK	How to read pediatric ECGs
19	Khilani, Praveen	Pediatric & Neonatal mechanical ventilation
20	Claussen,C.D.	Direct Diagnosis in Radiology Cardiac Imaging
21	Ruppel,G.L	Manual of Pulmonary Function Testing
22	Irwin, Richard S.	Procedures, Techniques and Minimally Invasive Monitoring in Intensive Care Medicine
23	Tecklin,Jans	Pediatric physical therapy

24	Pryor, J.A	Physiotherapy for respiratory and cardiac problems
25	Downie,P.A	Cash's text book of chest,heart and vascular disorders,for physiotherapists
26	Frownfelter,D	Cardiovascular and pulmonary physical therapy
27	Hillegass, E.A	Essentials of Cardiopulmonary Physical Therapy
28	Malone, TR	Imaging in Rehabilitation
29	Brown,E.M	Heart sound made easy
30	MacIntyre, Neil	Machanical Ventilation
31	Satpathy,M	Clinical diagnosis of congenital heart disease
32	Cross,Jane	Respiratory Physiotherapy Pocketbook : An On -Call Survival Guide
33	Burg,F.D	Current Pediatric Therapy

List of Recommended books for MPT (Sports)

S.N	Author	Title
1	O'Bannon, Teresa	Teaching With Movies Recreation Sport Tourism and Physical Education
2	Norton, Kevin	A Text book of body measurment for sport and health education
3	Verma, B.L	Biostatistics
4	Campbell,M.J	Medical statistics
5	Dvir,Zeevi	Isokinetics Muscle testing interpretation and clinical application
6	Oatis,C.A	Kinesiology
7	Ferguson, Tim	GCSE Physical Education
8	Gorwitz, Crystal	Teaching Healthy Lifestyles in Middle School PE
9	Lang, Annette	Morning Strength Workouts
10	Mujika,Inigo	Tapering and Peaking for Optimal Performance
11	Svensson, Malin	Nordic Walking




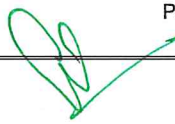
12	Koley,S	Textbook of Kinanthropometry
13	Nix, Staci	Williams' Basic Nutrition and Diet Therapy
14	Sherry,F	Oxford hand book of Sports Medicine
15	Baker,C.L	The Hughston clinic sport medicine book
16	Torgn J.S	Current Therapy in Sports Medicine
17	Vijay,S.A	MCQ in Sports Physiotherapy
18	Ram,C.S	Taping Technique Theory and Practice
19	Delee,J.C	Orthopaedic Sports Medicine Vol-1
20	Delee,J.C	Orthopaedic Sports Medicine Vol-2
21	Delee,J.C	Pediatric and Adolescent sports Medicine Vol-3
22	Gupta,L.C	Manual of First Aid
23	Harries,Mark	ABC of Sports Medicine
24	American Sport Education Program	Successful Sports Officiating
25	Karageorghis C.I	Inside Sports Physiology
26	Doughery, Jim	Survival Guide for Coaching Youth Football
27	Bass, Tom	Football Skills & Drills
28	Galat, Joe	Coaching Youth Football
29	Garland, Jim	Youth Soccer Drills
30	Brown, Jim	Tennis Steps to Success
31	Mcgregor, Stephen J.	The Runner's Edge
32	Mora,John	Triathlon 101 Essentials for Multisport Success
33	Panzera, Robert	Cycling Fast: Winning Essentials for Cycling Competition
34	Sovndal,Shannon	Cycling Anatomy
35	Mcardle W.D	Exercise Physiology
36	Demain, Arnold L.	Rehabilitation Medicine

37	Sivaram,C	Principles of Exercise in Physiotherapy
38	American College of sports Medicine	ACSM'S Resource Manual for Guidelines for exercise testing
39	Das,Lalita	Text book of Sports Medicine
40	Frontera, Walter R.	Clinical Sports Medicine : Medical Management & Rehabilitation
41	Khan,Karim	Clinical sports medicine
42	Perrin,D.H	The Injured Athlete
43	Prentice, W.E	Therapeutic Modalities in sports medicine
44	Stone,DA	Sports Injuries
45	Hall,Susan J	Sports Injury Management
46	EllenBecker,T.S	Knee Ligament Rehabilitation
47	American Sport Education Program	Coaching Youth Cheerleading
48	Susan, Jackson A.	Flow in Sport : The keys to Optimal Experiences & Performance
49	Taylor, Kevin J	Geocaching for School and Communities
50	Tood, Strong	Great Games for Big Activity Balls
51	Guy, Ray	Football Kicking and Punting
52	Biscombe. Tony	Rugby: Steps to Success
53	Masteralexis,L.A	Principles and Practice of Sport Management
54	Walter, Ryan	Hockey Plays and Strategies
55	Jung,Jim Woo	Freestyle Sparring : Techniques and Tactics for a Competitive edge
56	Sandler, David	Sports Power
57	Nicholas Hershman	Vol. I The Upper Extremity in Sports Medicine.
58	Nicholas Hershman	Vol. II The Lower Extremity in Sports Medicine.

59	Nicholas Hershman	Vol. III Spine in Sports Medicine. Mosby
60	D. Kulund	The Injured Athlete, Lippincott.
61	C. Norris	Sports Injuries – Diagnosis and Management for Physiotherapists, Heinmann.
62	Gould	Orthopaedic Sports Physical Therapy, Mosby.
63	Reed	Sports Injuries – Assessment and Rehabilitation, W.B. Saunders.
64	Zulunga	Sports Physiotherapy, W.B. Saunders.
65	Torg, Welsh & Shephard	Current Therapy in Sports Medicine III – Mosby.
66	Richard B. Birrer	Sports Medicine for the primary care Physician, CRC Press.
67	Morris B. Mellion	Office Sports Medicine, Hanley & Belfus.
68	Andrea Bates and Norm Hanson	Aquatic Exercise Therapy, W.B. Saunders.
69	Werner Kuprian	Physical Therapy for Sports, W.B. Saunders.
70	William Prentice	Rehabilitation Techniques for Sports Medicine and Athletic Training – Mosby.
71	James Cantlie	First Aid to Injured: St. John's Ambulance Association.
72	Indian Red Cross Society	Indian First Aid Manual

LIST OF RECOMMENDED BOOKS FOR MPT (OBSTETRIC AND GYNAECOLOGY)

S.NO.	Author	Title
1	Namrata-Kundariya	Physiotherapy-OBSTETRICS
2	Sylvia Verralls	Anatomy and Physiology Applied to Obstetrics
3	GB Madhuri	Textbook of Physiotherapy in Obstetrics and Gynecological Conditions
4	Lennox Hoyte	Biomechanics of the Female Pelvic Floor

Surj    

	Margot Damaser	
5	Carol B Benson	Ultrasonography in Obstetrics and Gynecology
6	Margaret Polden Jill Mantle	Physiotherapy in Obstetrics and Gynaecology
7	D.C. Dutta	Text book of Obstetrics
8	Lawrence Impey	Obstetrics and Gynaecology
9	Johnathan.S.Bek rek	Novak's Gynaecology
10	Stuart Campbell	Obstetrics by ten teachers
11	J. Laycock	Therapeutic Management of Incontinence and Pelvic Pain
12	Ruth Sapsford	Women's Health
13	E. Wilder	Obstetric and Gynaecologic Physical Therapy
14	Malti Hiranandani	Physiotherapy in Pregnancy
15	Changela	Role Of Physiotherapist In Obstetric And Gynecological Conditions

Surf

✓

OK