

GUJARAT UNIVERSITY

FACULTY OF MEDICINE

DEGREE OF MASTER OF PHYSIOTHERAPY (M.PHYSIO.)

Courses of studies prescribed for First & Second M. Physiotherapy examination

(In force for students admitted in October 2005 & thereafter)

RULES OF DEGREE OF THE MASTER OF PHYSIOTHERAPY GUJARAT UNIVERSITY

INDEX

1. The Course.
2. Nomenclature.
3. Objectives of the course.
4. Eligibility criteria for admission.
5. Intake of students.
6. Duration of the course.
7. Medium of Instruction.
8. Course of study.
9. Method of training.
10. Monitoring progress of studies.
11. Attendance.
12. Teaching & learning experience & graded responsibility.
13. Dissertation.
14. Guide.
15. Change of guide.
16. Schedule of examination
17. Scheme of examination.
18. Examiners
19. Criteria for declaring as pass in the university examination
20. Definition of Trial
21. Type of questions in the written papers
22. Course contents-I year M.P.T.
23. Course contents-II year M.P.T.
24. Recommended books & journals.

R.M PHYSIO. 1 :- THE COURSE

The Master of Physiotherapy Course will be a regular full time course of 2 years duration. During an academic year, a candidate enrolled in the program shall not appear in any other examination of the university enrolled in/or any other university. Any break in the career, power of extension of the course and the fixation of the term will be vested with the university.

R.M PHYSIO 2 :- NOMENCLATURE

The course will be referred to as a Master of Physiotherapy.

R.M PHYSIO 3 :- OBJECTIVES OF THE COURSE

1. To prepare a postgraduate student towards professional autonomy with self-regulating discipline.
2. To form base of professional practice by referral as well as first contact mode using evidence based practices.
3. To impart research basis in order to validate techniques & technologies in practice of physiotherapy.
4. To acquaint a student with concept of quality care at the institutional as well as at the community levels.
5. To inculcate appropriate professional relationship in multi-disciplinary set up, patient management & co-partnership basis.
6. To prepare students to address problems related to health education & community physiotherapy.
7. To practice the concept of protection of the community during referral as well as first contact practice.
8. To incorporate concept of management in physiotherapy.
9. To provide experience in clinical training & under graduate training partly.
10. To provide honest competent & accountable physiotherapy services to the community.

R.M. PHYSIO 4 :- ELIGIBILITY CRITERIA FOR ADMISSION

1. He/ She must be an Indian.
2. The candidate must have completed the recognized B. Physiotherapy or equivalent course and compulsory rotating internship before the date of interview. All candidates shall have to submit the documentary proof from the Principal/ Dean of college regarding the date of completion of internship along with the application, failing which their application shall be summarily rejected. However candidate should have to produce full internship completion certificate at the time of interview, failing which, candidate will not be eligible for admission.
3. ----
4. A candidate who is currently engaged in P.G. Physiotherapy studies in any University or any other University or equivalent body is not eligible. On completion of course he / she become eligible. Completion of course means he/ she must have completed the course training and passed the course examination conducted by concerned University.
5. A candidate, who in the past selected and admitted to any P.G. Physiotherapy course of this or any other university or equivalent body and did not complete that course, is not eligible.
6. A candidate who had applied earlier to this University and who was disqualified because of reasons mentioned in Rules 6.5 is not eligible.
7. A candidate who is graduate of a University other than Gujarat University should have to submit provisional eligibility certificate (P.E.C.) from this Gujarat University within one month from the date of his / her admission, failing which the admission of candidate shall be cancelled and will not be eligible to apply in future.
8. A candidate has to appear in Competitive examination for admission to Post – graduate Physiotherapy courses held by Gujarat University and admission to P.G. Course will be given as per merit of entrance test. (See Rules 4.1, 4.2, 4.3, 5.0 & 7.0)

1-A Admission Committee Admission and Placement of these candidates under particular Post Graduate Teacher shall be decided by the “Admission Committee” of this University. The Admission Committee will be as under:

- (a) Dean, Medical Faculty – Chairman
- (b) Head of the P.G. Institute / College where P.G. courses are conducted and one of its nominees from teaching staff.
- (c) Maximum up to five members of the teaching staff nominated by Chairman.
- (d) One member of Executive Council nominated by Vice-chancellor.
- (e) Pro-Vice-Chancellor will be the permanent invitee.

2.0 ----

2.1 ----

3.0 Total seats of PG B. Physiotherapy will be filled up by the Admission Committee of the University.

3.1 For this purpose selection will be done once in each academic year.

Academic year 1st May to 30th April of next year.

First Academic Term: 1st May to 30th October.

Second Academic Term: 1st November to 30th April Next Year.

3.2 ----

3. ----

4.0 Selection: Selection of candidates eligible under Rule 1 for seats under Rule 3.0 will be done category wise on the basis of merits as laid down herein further.

4.1 Preference shall be given to candidates graduating from this University who has completed internship/ horsemanship.

2. ----

3. Candidates graduating from any other University located in Gujarat State and completed the compulsory internship/ horsemanship.

4. ----

5. Candidates graduating from any other University located outside Gujarat State, in INDIA, and completed the compulsory internship/ horsemanship.

6. The candidate will be given a choice of subject and Post –Graduate Teacher according to his merit level. He / she will have to choose Registration with Residency out of the available choices in different subjects under particular teacher at his merit level. No student shall be given P.G. Admission without Residency (or higher post).

7. ----

8. Seats can be utilized in the same academic year only and vacancy in any one academic year cannot be utilized in subsequent academic year.

5.0 The affiliated PG colleges separately will prepare the category wise seat list in each subject. 7% of seats available for PG Degree and Diploma under Rule 3 will be reserved for the candidates belonging to Scheduled Caste, 15% of seats will be similarly reserved for ST candidates and 27% of seats will be reserved for candidates belonging to Socially and Educationally Backward Class (SEBC) students including widows and orphan children. The students desiring admissions under SEBC category will have to submit a certificate of current academic or financial year i.e. issued on or after 1st April 2005, that they are not included in the creamy layer from competent authority as prescribed by the Govt. of Gujarat from time to time along with the application.

Three percent (3%) of available seats in each category (SC/ ST/ SEBC/ OPEN) in Loco-motor disability (PH) shall be reserved for loco-motor disabled candidates of the respective category provided that a candidate having “loco-motor disability of lower limbs between 50% to 70% (upper limbs being normal). The certificate must be obtained as per the proforma annexed to the application form from Medical Board constituted for the purpose regarding disability and suitability of such candidate for undertaking the course shall be treated as final. For allocation of seats to physically handicapped category in said year, Roster point guideline given by Govt. of Gujarat will be followed.

1. These seats are reserved for the candidates belonging to SC/ ST & SEBC recognized as such in the State of Gujarat and not those or whose parents have migrated from other State to Gujarat State.

2. For allocation of seats (SC/ ST/ SEBC) in the said year to this reserved category a 100 point Roster, register will be followed, record of which will be maintained by University/ respective College/ Institutions. These Roster point list will be separate for affiliated Institution/ Colleges
3. ----
4. ----
5. (a) In case the seats reserved under rule 5.0 remain vacant due to non-availability of the candidates of the specified category upto Rule 4.1 selection, they shall be treated as unreserved seats and will be filled up by the candidates on the basis of merit from those who are eligible as per Rule 4.1.
(b) Of these, unfilled seats will be subsequently re-reserved after operation of Rule 4.1 and if some seats remain vacant due to non-availability of Candidates from Merit List of reserved candidates, these will be again unreserved and filled up by open category candidate under Rule 4.3.
(c) After operation of Rule 4.3 remaining vacant seats will be filled by candidate under Rule 4.5.
6. Candidates seeking admission under Rule 5.0 will have to produce the caste certificate from the competent authority as prescribed by the Govt. of Gujarat from time to time, and submit it along with the application. The candidates will not be allowed to change the caste category thereafter.
7. In case of doubt or discrepancy about the caste certificate, decision of the Director, Social Welfare, Gujarat State, shall be final.
- 6.0 Application: University conducting the admission procedure will issue notice inviting applications for admission under these rules. Candidates are required to submit the prescribed forms duly completed with receipt of entrance examination fee and within the prescribed time limit.
- 6.1 The application form should be complete in all respects before submission, no alteration or addition will be permitted later.

6.2 Every candidate will be issued a receipt when he/she submits his/her application form. This must be preserved for all future references and produced when asked for.

6.3 If any candidate wishes to claim admission for more than one caste category he/she should submit details in a Form along with application. However he/she should not pay another examination fee.

6.4 Interview and entrance examination date/place will be notified in the notice inviting applications, no separate notice or individual letters will be sent. The applicant should remain present on the day and time fixed for the same.

6.5 If any of the statements made in the application form or any information / document supplied by the candidate in connection with his application for admission is later on found to be false or incorrect or misguiding or if it is found that the candidate has concealed any information / fact in connection with his application, his admission shall be cancelled without any notice thereof, fees forfeited and he / she may be expelled and prosecuted.

7.0 Determination of the Merit Order:

7.1 (A) Entrance Examination :

1. There will be one paper of 3 hours duration for P.G. B. Physiotherapy courses containing 200 multiple-choice questions (MCQs) consisting of B. Physiotherapy subjects as per Gujarat University syllabus.
2. The questions will be single response objective type. Each answer with correct response shall be awarded two marks. $\frac{1}{2}$ mark will be deducted for each wrong response. Zero mark will be given for the question not answered. More than one answer indicated against a question will be deemed as incorrect response and will be negatively marked. It is responsibility of the student to do specific prescribed mark against not answered question failing which question will be deemed incorrect response and be negative marked.
3. ----
4. The examination shall be conducted in English medium only.
5. There is no provision for rechecking / re-evaluation of the answer sheets and no query in this regard will be entertained.

6. The examination will be conducted as per programme shown in notice.
7. Candidates are expected to take their seats 15 minutes before the commencement of the examination. Please note that the candidate will not be allowed entry into the examination hall or for the allotment by personal appearance without valid identify card in original.
8. Candidate who comes after 15 minutes of the commencement of the examination shall not be permitted to appear in the examination.
9. No Candidate shall be allowed to carry any textual material, printed or written, bits of papers or any other material except the Identity card (without envelop) inside the hall. If a candidate is found to be copying/ conversing with other candidates/ to have in his/ her possession papers, notes or books he/ she shall be disqualified from taking that Examination and Examination and the next one or two such Examinations according to the concerned Medical College for necessary action.
- 11.No candidate shall be allowed to the leave the examination hall before the end of 3 (three) hours. Question paper (even if answered) must be returned before leaving the examination hall.
- 12.The candidate shall maintain silence and attend to his paper only. Any disturbance in the examination hall shall be deemed as misbehavior and the candidate shall forfeit the right to continue to write in the examination. The decision of the Center Superintendent shall be final and conclusive.
13. Cellular phones, Pagers, Calculators etc. are strictly prohibited in Examination hall.
14. Canvassing directly or indirectly for the allotment of seats or adjustments thereafter would disqualify the candidate for admission on the basis of this examination influencing the staff by unfair means would lead to serious consequences for all concerned. The candidates or their relatives visiting University office/ officials for seeking change of the allotment would face disqualifying, since such visits would be treated as trespassing.
- 7.1 (B) ----
- 7.2 (a) ----
- 7.2 (b) Determination of inter-se-merit of candidates obtaining equal merit number in case of two or more candidates obtaining equal merit

number, the inter-se-merit of such candidates shall be determined in order of preference as under.

- (i) Candidates scoring less negative marks.
- (ii) Candidate's who secure higher percentage in final Year undergraduate examination after deduction of 1.5 for each unsuccessful trial in final year examination.

Note: First trial is deemed to take place when he/ she is due to appear for the examination, irrespective of his/ her actual appearance, provided that non-appearance is not a result of reasons beyond his control.

- (iii) According to age, older will get preference over younger.

7.3 Notification: Merit Lists will be notified as under:

Merit list – 1.1 = Candidates under Rule 4.1 belonging to Open (Unreserved Seats)

Merit list – 1.2 = Candidates under Rule 4.1 belonging to SC.

Merit list – 1.3 = Candidates under Rule 4.1 belonging to ST.

Merit list – 1.4 = Candidates under Rule 4.1 belonging to SEBC.

Merit list – 2.1 = Candidates under Rule 4.3 belonging to Open (Unreserved Seats)

Merit list – 2.2 = Candidates under Rule 4.3 belonging to SC.

Merit list – 2.3 = Candidates under Rule 4.3 belonging to ST.

Merit list – 2.4 = Candidates under Rule 4.3 belonging to SEBC.

Merit list – 3.1 = Candidates under Rule 4.5 belonging to Open (Unreserved Seats)

7.4 These Merit Lists will be placed on the notice board of the University, respective college or Institution at least five days prior to the date of beginning of selection.

7.6 A candidate having objection to the merit list may submit it in writing to the admission committee within 72 hours of publication of merit list. The admission committee will duly consider the objection and decide the case, If candidate is not satisfied, he/ she may make a written appeal to the Vice Chancellor, whose shall be final.

7.7 The sequence of interview for selection and admission will be as per Regulations.

8. ----

7.8 All PG courses are full-time and the candidate shall not indulge in private practice or employment of any nature (Part-time or full-time, paid or stipendiary or unpaid) during the course. If the candidate is employed, he/ she shall have to produce proof that he/ she has left the service or taken leave for full period of course before he/ she is given admission order. No concession will be given regarding joining period of 7 days counted from the day of selection. If he/ she fails to produce the above proof within 7 days, his/ her admission shall stand cancelled. (If the candidate is serving as Resident or Tutor in the same speciality under the same teacher under whom he/ she is selected, he/ she may continue the post).

If violation of this condition is detected anytime after the admission, his admission shall be cancelled without giving any notice and he/ she will not be eligible to apply in future.

9. ----

10. The selected and admitted candidate will have to join within stipulated time of 7 days. If he/ she fails to do so as if he leaves before completion of the course, he/ she will lose his admission (and registration) and will not be eligible to apply in future.

11. For granting of each term candidate shall have attended minimum 75% of the total number of the days in each term.

12. If any Post Graduate student is found absent for more than 30 days without permission of concerned authority, his/ her admission or registration in P.G. course will be cancelled without any notice, thereof fees and deposits will be forfeited and he/ she not be eligible to apply in future.

8. All these admissions will be decided by “Admission Committee” constituted as per Rule no. 1A on behalf of the Gujarat University.

9. A candidate admitted to Post Graduate degree course for any of the subject, may subsequently be required to work maximum for 6 months in another allied subject/ unit/ hospital/ super speciality related to the discipline concerned. Provided he/ she has kept remaining period of postgraduate training under his/ her own PG Teacher in the original subject, (one month training is compulsory in emergency care/ casualty department).

10. ----

11. The University reserves the right to introduce any new Rule or Regulations or to make changes in any of the existing Rules or Regulations at any time to deal with diverse problems arising out of infinite variety of situations.

12. ----

13. ----

15. ----

16. After the PG interviews, remaining vacancies, if any, remains in any subjects in the concerned department/ Physiotherapy college then the same subject to be offered to the Tutor, Jr. lecturer, Demonstrator, Assistant Lecturer of the concern department/ Physiotherapy college those who have applied for the same on the basis of merit of their First, Second, Third and fourth year marks of Physiotherapy course.

Regulation under Rule 7.6 Sequence of Interviews for Selection & Admission

Before the candidate is offered choice of post, his original documents are compared with the attested copies, he/ she had submitted with his application form. If all the originals are not available with him or if there is discrepancy in any of the documents, he/ she becomes ineligible. His interview will not be held and next candidate will be called.

If all attested copies of his documents are found to be exact copies of originals, he/ she will be offered the Seat. If he/ she chooses the seat, he/ she is asked to pay the fees and deposit. After the payment of fees his admission, order will be prepared. Inability to pay requisite fees and deposit will render him ineligible and the next candidate will be called.

However, if he/ she brings the fees and deposit when interviews are still going on, he/ she may be allotted new merit number next to the candidate being interviewed (or just concluded). E.g. 39A and offered Seat available at that time. All future procedures in respect of this candidate will be according to this new position in merit list.

A candidate who corrects the deficiency described in R. 1 (he/ she produces all originals and attested copies submitted by him with the application

are found to be exact copies of the original) is dealt with similar to the candidate described in R. 3.

A candidate who is absent when called, but reports late, is also dealt with similar to the candidate described in R. 3.

Unless the interview of one candidate is over, the next candidate is not called. Interview is considered over if,

- (i) He/ She has chosen the subject/ seat, paid fees, deposit, bond, bank surety etc. and his admission order is ready.
- (ii) He/ She has declined to take any of the seats offered.
- (iii) He/ She is ineligible under R. 1 or R. 2.

First candidates belonging to merit list 1.2 followed by 1.3 followed by 1.4 will be called for the interview, one by one according to merit and offered subjects belonging to their reserved categories.

If he/ she selects the subject:

- (a) He/ she is allotted that subject and is called again along with candidates of merit list 1.1 for Selection of Teacher according to General Merit, and
 - (b) His / her name is deleted from merit list 1.1, if it is included in 2 or more lists. If he/ she does not accept any of the subjects offered to his name is retained in Merit List 1.1/
8. Conversion of Reserved Seats into open merit (unreserved) Seats:
When the Merit Lists 1.2, 1.3, 1.4 are exhausted and seats reserved for SC, ST, SEBC still vacant all these seats are converted into Open Merit Seats.
9. Next, candidates belonging to Merit List 1.1 will be called for interview one by one, according to the Merit. Open merit seats including those converted from reserved seats and supernumerary seats are offered to open merit candidates. If any reserved seat is not filled, corresponding supernumerary seat is not offered.

10. Simultaneously, candidates of Merit Lists 1.2, 1.3 and 1.4 who had selected their subjects as per R. 7 and R. 9 will be called as per their General Merit Level and they will choose their Teachers.
11. ----
12. After Merit List 1.1 is exhausted, candidates belonging to Merit Lists 2.2, 2.3, 2.4 are called after re-reservation as per provisions in Rule 5.5(b). They will be dealt with an exactly similar lines as Gujarat University candidates are dealt, with by R.7 & R.8. Next, candidates belonging to Merit List 2.1 are dealt with an exactly similar lines to R.9 and R. 10.
13. ----
14. Admission orders are handed over to the candidates after selection of teachers, also copies of such orders are sent to Heads of Institution where they are admitted. These orders are withheld for those who are employed till proof is produced to the effect that he has left service or taken requisite leave and have actually handed over charge (Rule 7.8)
15. Original mark sheets etc. of admitted candidates should be retained by authority.

R.M PHYSIO 5 :- INTAKE OF STUDENTS

The intake of students to the course shall be in accordance with the ordinance in this behalf. The guide student ratio shall be 1:3. The intake of students to the course shall be once in a year. No postgraduate seat left unfilled in an academic year shall be carried forward to the next or subsequent academic years.

R.M PHYSIO 6 :- DURATION OF THE COURSE

The duration of master of physiotherapy course shall be extended over a period of 2 continuous years on a full time basis. Any break in the career, power of extension of the course & the fixation of the term shall be vested with the university.

R.M PHYSIO 7 :- MEDIUM OF INSTRUCTION

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

R.M PHYSIO 8 :- COURSE OF THE STUDIES

The course of study, subjects & teaching schedule for I & II year MPT course is shown separately in Table 1 & 2.

Table 1 : First year MPT (First 12 months)

Sr No.	SUBJECTS	Teaching Hours		
		Theory	Clinicals / Practicals	Total
1	Basic Sciences			
	i)Work Physiology & Electro physiology	100	75	175
	ii)Biomechanics & Bioengineering.	100	75	175
	iii)*History of physiotherapy education & Practice.	10	-----	10
	*Principles of Physical therapy Education.	20	-----	20
	iv)Research Methodology & Biostatistics	100	-----	100
	v)Education Technology	50	-----	50
	vi)Ethics,management &	50	-----	50

2	Physical & Functional diagnosis-Part-I	100	100	200
3	Advanced Physiotherapeutics-PartI(Clinical applied & allied therapeutics)	100	100	200
4	Clinical Training	-----	650	650
5	Seminars,Journal clubs,case presentations,Teaching skills,Field works etc.	-----	150	150
	Total	-----	-----	1780

Table 2 : Second year MPT (13-24 months)

Sr. No.	Subjects	Teaching Hours		
		Theory	Clinicals / Practicals	Total
1	Physical & Functional diagnosis Part-II	80	120	200
2	a)Advanced physiotherapeutics Part-II-A(Medical)	100	200	300
	b)Advanced Physiotherapeutics Part-II-B(Surgical)	100	200	300
3	Electives :			

	a)Physiotherapy in Neurological conditions Or b) Physiotherapy in Orthopaedic conditions. Or c) Physiotherapy in cardio pulmonary conditions. Or d) Physiotherapy in Rehabilitation. Or e) Physiotherapy in medical & surgical conditions. Or f) Physiotherapy in Paediatrics. Or g) Physiotherapy in electro-physiology & electro-diagnosis.	100	200	300
		100	200	300
		100	200	300
		100	200	300
		100	200	300
		100	200	300
4	Clinical Training	-----	500	500
5	Seminars	-----	150	150
	Total	-----	-----	1750

R.M.PHYSIO 9 :- METHOD OF TRAINING

The training of post graduate for MPT Degree shall be on a full time pattern with graded responsibilities in the management & treatment of patients entrusted to his/her care. Training should include involvement in laboratory, experimental work & research studies. The participation of students in all facets of educational process is essential. Every candidate should take part in seminars, group discussion, clinical rounds, case demonstration, clinics, journal review meetings & other continue education activities. Every candidate should be required to participate in the teaching & training program of under graduate students.

R.M PHYSIO 10 :- MONITORING PROGRESS OF STUDIES (INTERNAL MONITORING)

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

Work Diary :-

Every candidate shall maintain a work diary & record his/her participation in the training programs conducted by the department such as journal reviews, seminars etc.

Special mention may be made of the presentation by the candidate as well as details of the clinical or laboratory procedures, if any, conducted by the candidate. The work diary shall be scrutinized & certified by the head of the department & head of the institution & presented in the university examination.

Periodic Tests :-

The college may conduct 2 tests, one of them be an annual test at the end of the first year & the end of second year three months before the final year examination. The tests may include written theory papers, practical, viva voice & clinical in the pattern of university examination. Records & marks obtained in such tests will be maintained by the head of the department & sent to the university, when called for by the principal.

R.M PHYSIO 11 :- ATTENDANCE

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

R.M PHYSIO 12 :-

A. TEACHING & LEARNING EXPERIENCE

(a)	Journal review meetings	Minimum six in 2 years
(b)	Seminars	Minimum four in 2 years
(c)	Clinical presentation	Minimum 25 cases in 2
(d)	Special clinics	Minimum 20 in 2 years
(e)	Inter departmental meetings	Minimum five in 2 years
(f)	Community work, Camps/Field visits	Minimum four in 2 years
(g)	Clinical rounds	Minimum 250 in 2 years
(h)	Dissertation works	Minimum 200 hours in 2 years
(i)	Participation in conferences/ presentation of papers	Minimum two in 2 years
(j)	Teaching activities-U.G Teaching	10 hours / month
(k)	Learning activities: Self learning, Use of computers & library	-----
(l)	Participation in departmental activities	-----
(m)	Any other-Specify(eg: CME)	-----

Rotation & posting in other departments if any-minimum 2 months in one speciality.

B. GRADED RESPONSIBILITY IN CARE OF PATIENTS AND OPERATIVE WORK.

(Structured training schedule for clinical & elective subjects only)

Category	Ist 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-Observer
 A-Assisted a senior physiotherapist
 PA-Performed procedure under the direct supervision of a senior
 Physiotherapist.
 PI-Performed independently.

R.M PHYSIO 13 :- DISSERTATION

Every candidate pursuing MPT degree course is required to carry out work on a selected research project under the guidance of a recognized post graduate teacher. The results of such a work shall be submitted in the form of dissertation.

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

Every candidate shall submit to the registrar (academic) of the university in the prescribed, a synopsis containing particulars of proposed dissertation work within 6 months from the date of commencement of course on or before the dates notified by the university. The synopsis shall be sent through the proper channel.

Such synopsis will be reviewed & the university will register the dissertation topic. No change in the dissertation topic or guide shall be made without prior approval of the university.

The dissertation should be written under the following heading

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

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

Four copies of dissertation thus prepared shall be submitted to the registrar (evaluation), 3 months before final examination on or before the dates notified by the university.

The examiners appointed by the university shall value the dissertation. Approval of dissertation work is an essential precondition for a candidate to appear in the university examination. Two evaluators (examiners) apart from the guide shall value the dissertation. One of the evaluator is external from outside Gujarat University. The other one shall be internal from another college affiliated to Gujarat University. Acceptance from any one evaluator other than the guide will be sufficient for the candidate to be eligible to take up the examination.

R.M. PHYSIO.14 :- GUIDE

The academic qualification and teaching experience required for recognition by this university is as per the criteria for recognition of MPT teachers for guides as per IAP.

Criteria for recognition of MPT teacher/ Guide:

1. M.Sc. (PT) / MPT with five years teaching experience working on a full time position at an institution recognized by GUJARAT UNIVERSITY.

OR

BPT with at least 10 yrs. teaching experience, working on a full time position at a IAP recognized institution.

2. Notwithstanding above, in view of acute shortage of teachers, the teachers having three years teaching experience after MPT and working on a full time basis be considered as PG teachers for a period of five years (i.e. up to 2010)

R.M. PHYSIO 15 : - CHANGE OF GUIDE

In the event of a recognized guide leaving the college for any reason or in the event of death of guide, guide may be changed with prior permission from the university.

R.M. PHYSIO 16 : - SCHEDULE OF EXAMINATION

- a) The examination for MPT course shall be held at the end of 2 academic years (4 academic terms)
- b) There shall be two university examination sessions in an academic year i.e. in the month of October and April approximately.

R.M. PHYSIO 17 : - SCHEME OF EXAMINATION

The degree of Master of Physiotherapy will be taken by papers, practical and viva-voice only.

Written Examination (Theory)

A written examination consisting of 4 question papers, each of three hours duration and each paper carrying 100 marks. Recent advances in physiotherapy may be asked in any or all the 4 papers.

The paper IV will be for Elective subject in the branch chosen by candidates.

The Theory examination shall be held sufficiently earlier than clinical/ practical examination.

Particulars of Theory question paper and distribution of marks are shown on table

Sr. No.	Subject	Marks
Paper I	Basic Sciences	100
Paper II	Physical & Functional Diagnosis – Part I & II	100
Paper III	Advanced Physiotherapeutics – Part I & II (A & B)	100
Paper IV	Elective Subject	100

Clinical Examination – 400 marks

It should be aimed at examining clinical skills and competency of the candidates undertaking independent work as a specialist.

Viva – Voice – 100 marks

Viva – Voice examination shall aim at assessing depth of knowledge, logical reasoning, confidence and oral communication skills. Candidates will present dissertation work during viva- voice. However, no marks shall be assigned. The marks of Viva – Voice examination shall be included in the clinical examination to calculate the percentage and declaration of results.

R.M. PHYSIO 18 : - EXAMINERS

All examiners shall be recognized postgraduate teachers.

50% of total examiners shall be externals.

An external examiner must be a faculty of physiotherapy, preferably be from out of university and ordinarily may be appointed for not more than 3 years consecutively.

The same set of examiner shall ordinarily be responsible for the written, practical or part of examination.

R.M. PHYSIO 19 : - CRITERIA FOR DECLARING AS PASS IN
UNIVERSITY EXAMINATION

(a) To pass any M. Physiotherapy Examination, a student must obtain 50% marks in the theory aggregate and 50% marks in the practical aggregate in concerned examination.

(b) Award of classes:

First class with distinction - 75% and above in aggregate provided the Candidates pass the examination in first Attempt.

First class - 60% and above in aggregate provided the candidate pass in First attempt.

Pass class - 50% of marks in theory aggregate and 50% of maximum Marks in clinical and Viva-voice aggregate.

R.M. PHYSIO 20 : - DEFINITION OF TRIAL

First trial is deemed to take place when the candidate is due to appear for the examination irrespective of his/ her actual appearance, provided that non- appearance is not a result of reasons beyond his/ her control.

Similarly 2nd, 3rd, etc, trials relating to subsequent examination.

R.M. PHYSIO 21 : - TYPE OF QUESTIONS IN WRITTEN PAPER

Theory – 100 Marks each paper

1. Long Essay (2 questions) – 2 x 20 = 40 Marks.
2. Short Essay (6 questions) – 6 x 10 = 60 Marks.

Practical / Clinical – 400 Marks

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

Day – 1

1. General Long case (1) – 1 x 100 = 100 Marks
2. Short cases (2) - 2 x 50 = 100 Marks

[?] Physical & Functional Diagnosis 1 case

[?] General Short Case (1)

(If a candidate gets a long case in surgical conditions then the general short case will be in medical condition and vice-versa).

Day – 2

1. Elective Long Case (1) 1 x 100 = 100 Marks
Viva – Voice = 100 Marks

R.M PHYSIO 22 :- COURSE CONTENTS I YEAR MPT

BASIC SCIENCES

Work Physiology

1. Physiological & physical work.
2. Ergonomic aspects of work, energy transfer, oxygen intake and oxygen debt, cardio-respiratory and thermo regulatory changes during muscular work.
3. Body consumption, nutrition and caloric balance. Obesity and weight control.
4. Individual and environmental factors influencing muscle work and environmental control.
5. Fatigue assessment and scientific organization of work-rest regimes to control fatigue.
6. Cardio-vascular & respiratory dynamics (Including neuro-humoral control)
7. Acute effect of steady level exercise on following parameters-Blood flow/H.R,B.P & T.P.R/R.R/Acid Base Balance/Body Temperature & Fluid-Electrolyte Balance/Substrate utilization.
8. Nutritional Deficiencies, effects & management.
9. Conditioning effects of various levels of sub-maximal exercises.
10. Physiological movements-biophysics of connective tissue-response to mechanical loading.
11. Articular neuro-physiology & principles of applications.

Electro physiology

1. Characteristics and components of Electro therapeutic stimulation systems and characteristic and components of Electro physiological assessment devices.

2. Electrical excitability of muscle and nerve and composition of peripheral nerves.
3. A. muscle plasticity in response to electrical stimulation.
B. Instrumentation for Neuromuscular electrical stimulation (NMES)
4. Neurobiology of afferent pain transmission and central nervous system mechanisms of pain modulation.
5. Electrical stimulation and circulation.
6. Clinical Electro physiological testing.
7. Bio-electricity(R.M.P-Action Potential)
8. Neuro transmitters. Synapse & Synaptic transmission.
9. Classification-muscle fibre, nerve fibre, motor unit.
10. Propagation of nerve impulse & physiology of muscle contraction.
11. Reflex-classification & properties.
12. Sensations-Pathways & classification.
13. Type of nerve injury & wallerian degeneration.
14. Applied electro therapy-(i) Instrumentation electrodes.(ii) E.M.G Normal & abnormal. Application of N.C.V. (i) Sensory/Motor (ii) “F” Wave (iii) “H” Reflex (iv) Blink Reflex, SSEP.

Bio Mechanics

1. Material properties of bones and soft tissues.
2. Internal and external forces during posture and activities.
3. Biomechanics of respiration, circulation, hand function and gait.
4. Methods of kinetics and kinematics investigation, Anthropometrics measurements.
5. Neural control of locomotor functions.
6. Forces, equilibrium, levers – laws, mechanical advantage, materials properties of bones and soft tissues
7. Applied mechanics in the evaluation procedures
8. Analysis of functional hazards related to environment/ industry & clinical reasoning for the appropriate ergonomic advice.
9. Applied mechanics in the application of prosthesis, orthosis and mobility aids – materials, designs and bio-mechanical compatibility.

Research Methodology and Biostatistics

1. Meaning of research, objectives, motivation & types of research.
2. Research process and criteria of good research.
3. Problems encountered by researchers in India & defining the research problem.

4. Research design & sampling design.
5. Measurement & scaling techniques. Method of data collection.
6. Processing and analysis of data. Sampling fundamentals.
7. Testing of hypothesis and Chi-square test.
8. Analysis of variance & co-variance.
9. Role of computer in research and ethical concepts.

PHYSICAL & FUNDAMENTAL DIAGNOSIS – PART 1

1. Clinical examination in general and declaration of movement dysfunction.
2. Principles of pathological investigations and imaging techniques related to neuromuscular, skeletal and cardiopulmonary disorders with interpretation.
3. Development screening, development diagnosis, neurodevelopment assessment and motor learning – Voluntary control assessment.
4. Anthropometric measurements.
5. Physical fitness assessment by
 1. Range of Motion.
 2. Muscle strength, endurance and skills.
 3. Body consumption.
 4. Cardiac efficiency tests and spirometry.
 5. Fitness test for sports.
6. Psycho-physiological and neuro-psychological tests.
7. Electro-diagnosis, clinical and kinesiological electromyography and evoked potential studies. Biophysical measurements, physiotherapy modalities, techniques and approaches. Electro diagnosis, conventional methods, electromyography, sensory and motor nerve conduction velocity studies, spinal and somato-sensory evoked potentials.

ADVANCED PHYSIOTHERAPEUTICS – PART 1

1. Physiotherapy in pain management such as electromagnetic radiations, ultrasound, Electro acupuncture etc.
2. Maternal and child care in general physiotherapy.
3. Applied neuro- anatomy and neuro-physiotherapy.
4. Theories of motor learning.
5. Therapeutic bio feedback & psychosomatic training.
6. Combination therapy.
7. Functional training – Respiratory exercises, Training for feeding, bladder and bowel training, coughing and compression, artificial respiration, inhalation therapy & intensive care unit procedures.

8. Yogasanas & Pranayama
 - a) Physiological & therapeutic principles of yoga.
 - b) Yogasanas for physical culture, relaxation and meditation.
 - c) Application of Yogasanas in physical fitness, flexibility, cardiac rehabilitation and neuromotor learning.
 - d) Pranayama and respiratory physiology.
 - e) Kriyas and their physiological significance. Therapeutic application of yoga.
 - f) Yoga – a holistic approach.
9. Acupuncture: definition, principles, techniques, physiological effects, indications, contra-indications, dangers & integration of acupuncture with physiotherapy.
10. Magneto therapy.
11. Naturopathy.
12. History of manual therapy, overview of manual therapy approaches for all the joints
13. Clinical Reasoning and differential clinical diagnosis based on different approaches such as – Maitland, Kaltenborne, Cyriax, Mulligan and Meckenzie.
14. Soft tissue approaches – myofascial techniques, neural tissue mobilization, Muscle Energy Techniques (MET).
15. Practical application of various manual therapy modes given in No. 13 and 14 above.

R.M PHYSIO 23 :- COURSE CONTENTS II YEAR MPT

PHYSICAL AND FUNCTIONAL DIAGNOSIS – PART II

1. Massage, mobilization and manipulations.
2. Geriatric physiotherapy.
3. Aids and appliances, adaptive functional devices to improve neurological dysfunction.
4. Inhibition and facilitation techniques.
5. Exercise ECG testing and monitoring.
6. Pulmonary function tests.
7. Cardio vascular function disorders & principles of management, cardio-respiratory function disorders and assessments.
8. Physical disability evaluation and disability diagnosis. Gait analysis and diagnosis.

ADVANCED PHYSIOTHERAPEUTICS (Medical) – Part II (A)

1. Physiotherapy in common conditions of skin
2. Physiotherapy in common vascular diseases.
3. Physiotherapy in deficiency diseases.
4. Physiotherapy in respiratory disorders.
5. Physiotherapy Management of ischemic heart diseases.
6. Cardio-pulmonary medications & their effects on activity performance
7. Exercise planning and prescriptions.
8. Ergonomic aspects of exercise on oxygen, energy consumption, MET value of various exercises and activity.
9. Effect of aerobic, anaerobic as well as isometric and isokinetic exercise on cardiac functions.
10. Physiotherapy in psychiatry.
11. Management of pain in neurological and musculo-skeletal disorders.

12. Physiotherapy management in arthritis and allied conditions.

ADVANCED PHYSIOTHERAPEUTICS (SURGICAL)-PART II (B)

1. Physiotherapy management of post operative patients in cardiopulmonary disorders.
2. Monitoring systems and defibrillator. Artificial respirators.
3. Physiotherapy in post operative management of metabolic, hormonal, neoplastic and infective conditions of bones and joints.
4. Physiotherapy following arthroplasty, implants and soft tissue repairs.
5. Pre and post operative physiotherapy in tendon transfer. Electrical stimulation and biofeedback procedures.
6. Physiotherapy management following head injuries, in intensive care and neurosurgical procedures.
7. Physiotherapy following general surgery.
8. Physiotherapy following uro-surgery.
9. Physiotherapy following plastic surgery.
10. Physiotherapy management following selective and common cases of oncologic surgeries.
11. Physiotherapy following obstetric and gynaecological disorders.

ELECTIVE SUBJECTS

1 Physiotherapy in neurological conditions.

OBJECTIVES

The course shall enable the candidate to expertise in early intervention acquisition and application of neuromotor and sensory integration skills on adults and paediatric neurological conditions as a first contact practitioner. Such candidate shall also attain an ability to acquire a position as consultant in the team of health care professionals involved in electro-diagnosis, disability evaluation, as well work in the management of patients at the intensive care area and \or in the rehabilitation neurologically affected adults and children/neonates. The sub-specialities are:

- a. Adult neurological and psychosomatic conditions and applied neurophysiology.
- b. Developmental and paediatric neuro pathological conditions.
- c. Applied bio-mechanics and bio-engineering
- d. Geriatrics
- e. Electro-diagnosis

f. Intensive care

SYLLABUS

1. Anatomy and physiology of central nervous system and peripheral nervous system.
2. Clinical symptomatology and patho-physiology of the neurological disorders.
3. Clinical assessment and investigations along with differential diagnosis.
4. Electro-diagnosis, conventional methods-Strength duration curves, accommodation, skin temperature, resistance and blood flow.
5. Electromyography especially with reference to patho-physiology and patho-mechanics. Quantitative EMG
6. Evoked potential studies.
7. Evaluation of ANS dysfunction with reference to psycho-physiological testing. Biofeedback training.
8. Neuro-psychological functions. Perception testing and training.
9. Motor control assessment, reflexes and automatic reactions – voluntary control. Feedback mechanism.
10. Motor learning and motor control training techniques.
11. Functional electrical stimulations and bio-feedback methods.
12. Learning skills, ADL and functional activities.
13. Aids and appliances in neurological disorders. Prescriptions, testing and training.
14. Associated functional disturbances of higher functions and their testing and training.
15. Community based Rehabilitation for neurological dysfunction. Disability evaluation and management.
16. Learning Techniques of neuro-physiotherapy, emphasis on Bobath, Roods, NDT, PNF & Brunnstrom
17. Assessment of neurogenic hand and foot
18. Neuro-physiology of Aging and its effects on movement, posture and gait
19. Developmental and Paediatric neuro-pathological conditions.
20. Geriatrics
21. Intensive Care Units.
22. Diagnostic procedures in movement disorders.

2. Physiotherapy in Musculo-skeletal disorders: --

OBJECTIVES:

This course shall enable the candidate to establish first contact physiotherapy for the management of musculo-skeletal disorders and pain,

expertise in the skills of manual medicine, advanced electro-diagnostic/therapeutic skills, and ability to function as a consultant in the team of health professionals concerned with sports sciences, hand rehabilitation, women's health as well as geriatric health and industrial set up. The sub specialities are

- a. Advances in manual medicine and pain management
- b. Rehabilitation of hand
- c. Sports sciences
- d. Industrial health and ergonomics
- e. Women's health and geriatric health
- f. Applied bio-mechanics and bio-engineering

SYLLABUS:

1. Applied anatomy with emphasis on bio-mechanics, kinesiology, work-physiology and locomotor functions
2. Clinical assessment and rationale of laboratory investigations along with differential diagnosis.
3. Clinical symptomatology, patho-physiology and patho-mechanics of musculo-skeletal conditions.
4. Functional assessment (Hand function, Gait, Posture, ADL, Occupational work)
5. Kinetic and kinematics analysis
6. Analysis and classification of sports and sports injuries
7. Assessment of locomotor impairments, disabilities and disability evaluation.
8. Physiotherapy management of locomotor disorders, principles of medical and surgical aspects, sports psychology and retraining.
9. Management of sports injuries, sports fitness/ rehabilitation of paediatric musculo-skeletal disorders.
10. Orthopaedic implants - designs, materials, indications, post-operative assessments and training
11. External aids, appliances, adaptive self help devices, prescription, biomechanical compatibility, check out and training
12. Manual therapies: Soft tissue manipulations and mobilizations, neural mobilizations, acupressure.
13. Joint manipulation – Peripheral joints and vertebral joints.
14. Neurological complications of locomotor disorders, conservative electro-diagnosis, electromyography and evoked potential studies.
15. Community Based Rehabilitation in musculo-skeletal disorders.
16. Rehabilitation of hand
17. Industrial health and ergonomics
18. Women and geriatric health.

19. Fitness testing in sports and industry.

3. Physiotherapy in Cardio-Pulmonary disorders: --

OBJECTIVES:

The course shall enable the candidate to expertise in the knowledge and skill of operating advanced instrumentation at the intensive care area as well as modern investigative procedures such as stress testing in the presence of a physician. Such candidate shall also attend an ability to function as an essential team member of intensive care units, as well as team of experts in the cardio-pulmonary rehabilitation general fitness and health promotion at the hospital set-ups industrial/ geriatric set-ups, health clubs, sports fitness/ training and women's health. The sub-specialities are

- a. Adult and paediatric emergency.
- b. Cardiac rehabilitation and management.
- c. Pulmonary Rehabilitation.
- d. Geriatric and Industrial Health.
- e. Women's health.
- f. Sports sciences and health preparations.

SYLLABUS:

1. Anatomy and physiology of cardio-vascular and pulmonary systems.
2. Epidemiology, symptomatology and patho-physiology of cardio-pulmonary disorders.
3. Clinical assessment, Rationale of laboratory investigations and differential diagnosis.
4. Evaluation of pulmonary dysfunctions, lung function tests – volumetric, analysis of blood gases, X-ray chest.
5. Evaluation of cardiac dysfunctions.
ECG, Exercise ECG testing, Halter monitoring etc.
Echocardiogram, X-ray, imaging techniques etc.
6. Evaluation of peripheral vascular disorders: Clinical, blood flow studies, temperature plethysmography. ANS dysfunction testing.
7. Risk factors and preventive measures.
8. Cardio-pulmonary emergencies and management principles – medication, critical care, indications of surgical interventions, stabilization of vital functions – defibrillation
9. Intensive Care Unit – concept and set up, equipment for advanced methods of resuscitation, monitoring and patient management: artificial airways, ventilators, pulse oxymeter, defibrillator.
10. Cardio-pulmonary resuscitation.

11. Respiratory Physiotherapy – Lung hygiene, humidifiers, nebulizers, intermittent positive pressure breathing etc. and rehabilitation.
12. Medical, surgical and physiotherapy management of peripheral vascular disorders.
13. Exercise testing, planning and prescription, aerobic and anaerobic exercise training.
14. Cardiac rehabilitation – conservative and post-operative management.
15. CBR in cardio-vascular and pulmonary conditions.
16. Physiotherapy management in ICU, NICU, Emergency trauma care, ICU, CCU, MICU.
17. Pharmacological agents used in ICUs
18. Pulmonary rehabilitation
19. Geriatric and industrial health.
20. Women's health
21. Sports sciences and health preparations.
22. Diagnostic procedures in cardio-respiratory conditions.
23. Fitness testing in sports and industry.

4. Physiotherapy and Rehabilitation: --

OBJECTIVES:

At the end of the course, the candidate will

- a. Acquired the in-depth understanding of the concept of community based rehabilitation.
- b. Be able to assist in planning and organization of camps at community level.
- c. Be able to impart services and training at the community level effectively with minimum resources.

The course shall enable the candidate to expertise in the community health and function in the general set up as consultant. Such candidate shall attain ability as a consultant and mandatory member of the team of the health professionals, involved in the following sub-specialties.

- a. Sports sciences and health promotion
- b. Movement and psycho-somatic conditions.
- c. Cardio-pulmonary rehabilitation.
- d. Mother and child care.
- e. Industrial health
- f. Geriatrics.

SYLLABUS :-

1. Institute based rehabilitation & multi-disciplinary approach.
2. Methodology of CBR with reference to national health delivery system.

3. Role of national institutes, District rehabilitation centre & primary health centre (with appropriate exposure)
4. Public awareness to the various disabilities, communication. Message generation & dissipation.
5. Persons with Disability Act-1995 & related government infrastructure.
6. Role of government in C.B.R, inter-sectoral programs & co-ordination. Implementation of the act.
7. Role of Non-Government organizations in C.B.R.
8. Scope of community Physiotherapy.
9. Disabilities detection & early intervention. Disability Evaluation, Compensation and Legislation.
10. Physical fitness, stress management through Yoga & Psychosomatic approaches.
11. Home exercises programs for various classifications of disabilities.
12. Physiotherapist as a master trainer in C.B.R.
13. Physiotherapy in maternal & child health care.
14. Holistic Physiotherapy for the aged.
15. Physiotherapy role in the industry-preventive, intervention, ergonomic & rehabilitative.
16. Community physiotherapy as home care programme, transfers of skills to non-professional workers as well as the family members.
17. Concept of multi-purpose health workers – Anganwadi workers
18. Epidemiological research, problem identification – preventive measures, community participation.
19. Role of physiotherapists in training of multi-purpose, health purpose.
20. Sports sciences and health promotions
21. Movement in psychosomatic disorders.
22. Cardio-pulmonary rehabilitation.

5. Physiotherapy In Medical & Surgical Conditions: --

OBJECTIVES:

At the end of the course, the candidate will

- a. Have acquired the updated knowledge of exercise physiology, electro physiology, pharmaco-therapeutic agents used in combination with various electro-therapeutic modes with appropriate clinical decision and reasoning in the management of pain/ tissue healing/ wound care and skin conditions.
- b. Have acquired the updated knowledge of allied therapeutics viz. Yoga, acupuncture, magnetotherapy, naturopathy and be able to integrate it with physiotherapy.

- c. Have acquired updated, in depth knowledge and skills of physiotherapy for the entire medical and surgical conditions including the intensive care areas related to the same.
- d. Have acquired updated, in depth knowledge and ability to function as a consultation in the team of health professionals, concerned with sports sciences, hand rehabilitation, women's health as well as geriatrics health and industrial set-up.

SYLLABUS:

1. Physiotherapy in pain management such as electro-magnetic radiations, Ultrasound, LASER, electro-acupuncture etc.
2. Combination therapy and functional training – respiratory exercises, training for feeding, bladder and bowel training, coughing and compression, artificial respiration, inhalation therapy and intensive care unit procedures.
3. Physiotherapy in common conditions of skin, in common vascular diseases, in psychiatry, in pre and postoperative physiotherapy in tendon transfers. Electrical stimulation and biofeedback procedures.
4. Physiotherapy following general surgery, uro-surgery, plastic surgery, selective and common cases of oncology surgery, obstetrics and gynaecological disorders, post operative management of metabolic, hormonal, neoplastic and infective conditions of bones & joints.
5. Analysis and classification of sports and sports injuries. Management of sports injuries, sports fitness/ rehabilitation.
6. Geriatric physiotherapy, industrial set-up and occupational hazards.
7. Wound healing, scar mobilization with various electro therapy modes.
8. Mastectomy, burns, skin grafts, reconstructive surgery, ENT.
9. Yogasanas and pranayama – physiological and therapeutic principles of Yoga, Yoga for relaxation and meditation and in cardiac rehabilitation.
10. Acupuncture – definition, principles, techniques, physiological effects, indications, contra-indications, dangers and integration of acupuncture with physiotherapy.
11. Magnetotherapy, Naturopathy

6. Pediatric Physiotherapy:-

OBJECTIVES:-

The course shall enable the candidate to expertise in the early intervention in the management of neonates & high-risk babies, neuro-developmental, musculo-skeletal and cardio-pulmonary conditions in the paediatric population (The intensive care, hospital or community set-up, school & sport clubs)

The sub-specialities are :-

- b. Paediatric Musculoskeletal conditions.
- c. Paediatric neurological & psychosomatic conditions.
- d. Neonatal care & early intervention.
- e. Mother & child care.
- f. Cardio-pulmonary conditions in paediatrics including intensive care.
- g. Sports in children.

SYLLABUS :-

- 1) Genetic bases of paediatric disorders. Embryology & genetic counseling.
- 2) Growth & development of a child and its disorders.
- 3) Neuro-developmental assessment, developmental diagnosis. Developmental screening.
- 4) Cardio-pulmonary assessment of neonate & infant & related paediatric disorders.
- 5) Assessment of progressive locomotor disorders-Neuropathic & myopathic.
- 6) Clinical symptomatology & patho-physiology of locomotor & cardio-pulmonary disorders.
- 7) Principles of laboratory investigations for differential diagnosis.
- 8) Neonatal care, Risk babies, early intervention & management.
- 9) Management of congenital locomotor disorders including the prosthetic & orthotic management.
- 10) Management of neuro-paediatric patients (NDT).
- 11) Motor learning process-Theory & Techniques.
- 12) Disorders of perception & sensory integration.
- 13) Integrated approach in management of paediatric disorders.
- 14) Paediatric surgeries & its postoperative management.
- 15) CBR in paediatric conditions.
- 16) Paediatric Musculo-skeletal conditions.
- 17) Mother and childcare.
- 18) Cardio-pulmonary conditions in paediatrics including intensive care.

19) Sports in children.

7. Sports Physiotherapy :-

OBJECTIVES :-

This course shall enable to establish first contact physiotherapy for management of sports injury, emergency care, athletic first aid, prevention of sports injury. It will help to function as a consultant in the team of health professionals concern with sports science, women's health and common medical problems related to sports persons.

The sub-specialities are :

- a. Industrial health & geriatrics
- b. Sports injury.
- c. Sports psychology.
- d. Sports massage.
- e. Women's health.

SYLLABUS :-

1. Applied anatomy – scope , skin , muscle , bones , joints
2. Applied physiology – Blood , cardiovascular , endocrine , nervous system
3. Applied pathology – inflammation & repair of soft tissue injury
4. Applied pharmacology – principles of drug action , basic pharmacokinetics , use of drugs in musculoskeletal system
5. Applied radiology – basics , imaging of body parts
6. Rheumatology – rheumatoid arthritis , SLE , juvenile rheumatoid arthritis , osteoarthritis & other geriatric problems
7. Principles of kinematics & kinetics , biomechanical analysis of various sporting activity
8. Principles of strengthening exercises , mobilization and application of neuromuscular facilitation techniques in sports
9. Sports massage

10. Emergency care and athletic first aid : Cardiopulmonary Resuscitation , shock management , internal and external bleeding , splinting , stretcher use
11. Exercise therapy in post surgical management of sports injuries
12. Acute & overuse injuries to upper limb, lower limb , chest , abdomen and their management , common medical problems associated with sports person
13. Female specific problems, pediatric sports injuries
14. Principles of therapeutic massage, cryotherapy, heat therapy , manual therapy , techniques of functional bandaging
15. Effects of exercise on different systems, obesity & weight control , aging & exercise
16. Exercise training & prescription, high altitude training , special aids for performance enhancement , doping in athletes
17. Sports psychology –definition, emotions with reference to sports performance, personality of sports person.

8. Physiotherapy in Electro-physiology and Electro-diagnosis :-

OBJECTIVES

This course shall enable to establish first contact physiotherapy for electrodiagnosis and functional electrical stimulations. It will help to function as a consultant in the team of health professionals concerned with electro-physiology, electrodiagnosis, electromyography, nerve conduction velocities. The sub specialities are :

- a. Clinical and kinesiological electromyography.
- b. Sensory and motor nerve conduction velocities.
- c. S.D. curve
- d. Evoked potential studies.

SYLLABUS :-

1. Characteristics and components of Electro therapeutic stimulation

- systems and characteristic and components of Electro physiological assessment devices.
2. Electrotherapy and functional electrical stimulations.
 3. A. muscle plasticity in response to electrical stimulation.
B. Instrumentation for Neuromuscular electrical stimulation (NMES)
 4. Neurobiology of afferent pain transmission and central nervous system mechanisms of pain modulation.
 5. Electrical stimulation and circulation.
 6. Clinical Electro physiological testing.
 7. Bio-electricity(R.M.P-Action Potential)
 8. Neuro transmitters. Synapse & Synaptic transmission.
 9. Classification-muscle fibre, nerve fibre, motor unit.
 10. Propagation of nerve impulse & physiology of muscle contraction.
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11. Reflex-classification & properties.
 12. Sensations-Pathways & classification.
 13. Type of nerve injury & wallerian degeneration.
 14. Applied electro therapy-(i) Instrumentation electrodes.(ii) E.M.G Normal & abnormal. Application of N.C.V. (i) Sensory/Motor (ii) “F” Wave (iii) “H” Reflex (iv) Blink Reflex, SSEP.
 15. Electrodiagnosis. Clinical and Kinesiological electromyography and evoked potential studies. Biophysical measurements, physiotherapy modalities, techniques and approaches.
 16. Electrodiagnosis, conventional methods. Electromyography, sensory and motor nerve conduction velocities, spinal and somatosensory evoked potentials.

R.M PHYSIO 24 :- RECOMMENDED BOOKS :-

I YEAR M.P.T

1. Scientific basis of human movement - Gowitzke, Williams & Wilkins, Baltimore 1988 3rd edition.
2. Clinical biomechanics of spine-White A,A and Punjabi-J.B Lippincot, Philadelphia 1978.
3. Kinesiology - Brunnstrom Singe, F.A Davis-Philadelphia-1966
4. Textbook of work physiology – Guyton, Prim Books Banglore – 1991 8th edition
5. Handbook of physiology in Aging – Masoro, C.R.C Press, 1981.
6. Research for physiotherapists – Hicks C., Churchill Living stone, Edingburgh 1995 Ed. S
7. Introduction to research in Human Sciences – Polgar S., Churchill Living stone, London, 1988.
8. Elements of Research in Physical Therapy – Currier D.P., Williams & Wilkins, Baltimore, 1990, Ed. 3.
9. Handbook of Research Method – Sproull, Scarecrow Press, 1998.
10. Physical Therapy Research – Domholdt, W.B. Saunders, Philadelphia. 1993.
11. Public power & Administration – Wilenski, Hale & Iremonger, 1986.
12. Physical Therapy Administration & Management – Hickik Robert J.

13. Management Principles for physiotherapists – Nosse Lorry J.
14. Human Neuro-anatomy – Carpenter M. B., Williams & Wilkins, Baltimore, 1983.
15. Physical Therapy Assessment in Early Infancy – Wilhelm Churchill Living stone, New York, 1993.
16. Physical Therapy for Children – Campbell Suzann K, W.B. Saunders, Philadelphia, 1994.
17. Physical Management of Multiple Handicapped – Fraser, William & Wilkins, Baltimore.
18. Elements of paediatric Physiotherapy – Eckerley p, Churchill Living stone, Edinburgh, 1993.
19. Physiotherapy in paediatrics – Shepherd R. Heinmann, London, 1980 2nd edition
20. The growth chart – WHO, Geneva, 1986.
21. Orthotics in neurological rehabilitation – Alsen, Demos Publication, New York 1992.

II Year MPT

1. Manual of nerve conduction velocity techniques – De Lisa, Raven press, New York, 1982.
2. Electro-diagnosis in diseases of nerve and muscle – Kimura j, F.A. Davis, Philadelphia.
 3. Mobilization of the extremity joints – Kalternbore, Harper and Row, Philadelphia, 1980.
 4. Chest Physiotherapy in Intensive Care Unit – Makezie, Williams & Wilkins, Baltimore.
 5. Cardiopulmonary Symptoms in Physiotherapy – Cohen M, Churchill Livingstone, London – 1988.
 6. Physical Rehabilitation: assessment and Treatment – O’Sullivan, F.A. Davis, Philadelphia 1994.
 7. Neuro-rehabilitation – Faber, W.B. Saunders, Philadelphia 1982.
 8. Orthopaedic Physical therapy – Donatteli, London, Churchill Livingstone, 1994.
 9. Yoga therapy – Kuvalayananda Swami and Vinekar, Popular prakrashan, Bombay, 1992.
 10. Gait Analysis – Perry J., Black Thorofare, New Jersey, 1992.
 11. Biofeedback – A practitioner’s guide – Kerth D, Guilford press.

12. The neural basis of motor control – Black I, Churchill Livingstone, London – 1987.
13. Physical therapy Management of Parkinson's disease – Tumbell Gerode I, Churchill Livingstone, London – 1994.
14. Abnormal postural reflex activity caused by Brain lesions – Bobath b. Aspen publications, Rockville, 1897.
15. Disorders of voluntary muscle – Eagal, Churchill Livingstone, Edingburgh, 1988.
16. A clinician's view of neuro muscle disorder – Brook M. H Williams and Wilkins, Baltimore, 1986.
17. Proprioception, neuro muscular facilitation techniques – Knot M. and Voss, Harper and Row, New York 1972 2nd edition
18. Stroke rehabilitation – Laidler, Capman and Hall, London 1994.
19. Motor relearning programme for stroke – Carr, Aspen publication, Rock ville, 1987.
20. Adult hemiplegia: evaluation and treatment – Bobath B. Heinmann, London 1983.
21. Paraplegia and tetraplegia – Brombley, Churchill Livingstone, Edingburgh 1991.
22. Child with spina bifida – Anderson E.M, and Spain B Methun, London 1977.
23. A manual of neonatal intensive care – Robert N.R.C, Edward Arnold, London 1986.
24. Measurement in Physical therapy – Churchill Livingstone, London 1988.
25. Soft tissue pain and disability – Cailliet Rene, Jaypee Brothers, New Delhi 1992.
26. Myofascial Pain And Dysfunction – Travell, Williams & Wilkins, Baltimore 1983.
27. Physical Therapy of the low back – Twomoy, Churchill Livingstone, London 1995.
28. Sports Injuries of the Shoulder – Souza Thomas A, Churchill Livingstone, London 1994.
29. Vertebral Manipulation – Maitland G.D, Boston, Butterworth & Co. Boston, 1997.
30. Peripheral Manipulation – Maitland G.D, Boston, Butterworth & Co. Boston, 1997.
31. Sports and physical therapy – Bernhardt Donna, Churchill Livingstone, London 1995.
32. Hand rehabilitation – Christine, Churchill Livingstone, London 1995.

33. Cardiopulmonary Symptoms in Physiotherapy practice – Cohen M. Churchill Livingstone, London 1988.
34. Clinical application of ventilatory support – Kinby, Churchill Livingstone, New York 1990.
35. Cardiopulmonary Physiotherapy – Irwin C.V., Mosby, St. Louis 1990.
36. Pulmonary rehabilitation: Guidelines to success – Hoidkins, Butterworth, Boston 1984.
37. Cardiac Rehabilitation – Amundsen L.R, Churchill Livingstone, London 1988.
38. Obstetrics and Gynecological Physical Therapy – Wilder Elnine, Churchill Livingstone, New York 1988.
39. Physiotherapy in Obstetrics and gynecology – Polden & Mantle, Jaypee Brothers, New Delhi 1994.
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41. Industrial Therapy – Key G.L, Mosby, St. Louis 1987.

JOURNALS

1. Journal of Indian Association of Physiotherapy
2. Physical Therapy (APTA, America)
3. Physiotherapy (CSP, London)
4. American journal of Physical Medicine & Rehabilitation
5. Physiotherapy (Canada)
6. Physiotherapy – theory & Practice
7. Australian Journal of Physiotherapy
8. Clinical Kinesiology
9. Journal of Bio-mechanics
10. American Journal of Sports Exercises
11. Paediatric Physical Therapy
12. Journal of Rehabilitation – Research & Development
13. Archives of Physical Medicine & Rehabilitation
14. Journal of Paediatric Orthopaedics.
15. Journal of Neurological Sciences.

SECTION - III

TABLE – III

**MODEL CHECK-LIST FOR EVALUATION OF JOURNAL REVIEW
PRESENTATIONS**

Name of the student:

Name of Faculty / Observer:

Date:

Sr. No	Items for observation during Presentation	Poor (0)	Below Average (1)	Average (2)	Good (3)	Very Good (4)
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1	Article chosen was					
2	Extent of understanding of Scope & 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					

TABLE – IV

MODEL CHECK-LIST FOR EVALUATION OF SEMINAR PRESENTATIONS

Name of the student:

Name of Faculty / Observer:

Date:

Sr. No.	Items for observation during presentation	Poor (0)	Below Average (1)	Average (2)	Good (3)	Very Good (4)
1	Whether other relevant publications consulted					
2	Whether cross references have been consulted					
3	Completeness of preparation					
4	Clarity of presentation					
5	Understanding of subject					
6	Ability to answer the					
7	Time schedule					
8	Appropriate use of Audio – Visual aids					
9	Overall performance					
10	Any other observations					
	Total score					

TABLE – V

MODEL CHECK-LIST FOR EVALUATION OF CLINICAL WORK

Name of the student:

Name of Unit Head:

Date:

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

TABLE – VI

EVALUATION FOR CLINICAL PRESENTATION

Name of the student:

Name of Faculty:

Date:

Sr. No	Points to be considered	Poor (0)	Below Average (1)	Average (2)	Good (3)	Very Good (4)
1	Completeness of History					
2	Whether all relevant points elicited					
3	Clarity of presentation					
4	Logical order					
5	Mentioned all positive and negative points of importance					
6	Accuracy of general physical examination					
7	Whether all physical signs elicited correctly					
8	Whether any major signs missed or misinterpreted					
9	Diagnosis – Whether it follows logically from history & findings					
10	Investigation required Special investigation					

11	AIMS					
12	MEANS					
13	Treatment Techniques					
14	Other					
	Grand Total					

TABLE – VII

MODEL CHECK-LIST FOR EVALUATION OF TEACHING SKILL PRACTICE

Name of the student:

Name of Faculty:

Date:

Sr. No.	Details	Strong	Weak
1	Communication of the purpose of the talk		
2	Evokes audience interest in the subject		
3	The introduction		
4	The sequence of ideas		
5	The use of practical examples & / or illustrations		
6	Speaking style (enjoyable, monotonous, etc., Specify)		

7	Attempts audience participation		
8	Summary of main points at the end		
9	Asks questions		
10	Answer questions asked by the audience		
11	Rapport of the speaker with his audience		
12	Effectiveness of the talk		
13	Uses Audio – Visual aids appropriately		

TABLE – VIII

MODEL CHECK – LIST FOR DISSERTATION PRESENTATION

Name of the student:

Name of Faculty:

Date:

Sr. No.	Points to be considered divine	Poor (0)	Below Average (1)	Average (2)	Good (3)	Very Good (4)
1	Interest shown in selecting a topic					
2	Appropriate review of literature					
3	Discussion with guide & other faculty					
4	Quality of protocol					
5	Preparation of proforma					
	Total score					

TABLE – IX

CONTINUOUS EVALUATION OF DISSERTATION WORK BY GUIDE

Name of the student:

Name of Faculty:

Date:

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