VINAYAKA MISSION'S RESEARCH FOUNDATION

(Deemed to be University under section 3 of the UGC Act 1956)

VMRF DU – YEAR OF ESTABLISHMENT: 2001

REGULATIONS AND CURRICULUM WITH CHOICE BASED CREDIT SYSTEM GOVERNING **MASTER OF PHYSIOTHERAPY PROGRAM** FROM THE ACADEMIC YEAR 2021-2022

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REGULATIONS AND CURRICULUM WITH CHOICE BASED CREDIT SYSTEM GOVERNING MASTER OF PHYSIOTHERAPY PROGRAM FROM THE ACADEMIC YEAR 2021-2022

MASTER OF PHYSIOTHERAPY (M.P.T.)

DEGREE PROGRAMME REGULATIONS

In exercise of the powers conferred by the Memorandum of Association and Bye Laws of the Vinayaka Mission's Research Foundation (Deemed to be University), Salem, the Academic Council of the University based on the recommendations of the concerned Board of Studies hereby issue the following regulations pertaining to the Post Graduate programme for the award of the degree of Master of Physiotherapy (M.P.T.) at this University.

1. SHORT TITLE AND COMMENCEMENT

These regulations shall be called as "Master of Physiotherapy (M.P.T.) Degree Programme Regulations 2021" or simply called as 'M.P.T.R 2021" of the Vinayaka Mission's Research Foundation (Deemed to be University).

This regulation will come into effect from the Academic Year 2021-22 with the approval of the Academic Council based on the recommendations of Board of Studies and modifications as may be approved by the authorities of the University from time to time.

2. PREAMBLE

The degree of Master of Physiotherapy (M.P.T.) under Faculty of Physiotherapy shall be awarded to a candidate who, as per these regulations, has successfully undergone the programme, passed the prescribed examinations and thereby qualified to receive the degree.

The programme shall run on choice based credit system (CBCS).

- The CBCS provides an opportunity for the students to choose courses from the prescribed courses comprising Core, Ability enhancement and Generic/Discipline specific elective courses.
- The courses can be evaluated following the grading system, which is considered to be better than the conventional marks system. Therefore, it is necessary to introduce uniform grading system in the entire higher education in India.
- This will benefit the students to move across institutions within India to begin with and across countries.
- The uniform grading system will also enable potential employers in assessing the performance of the candidates.
- It will bring uniformity in evaluation system and computation of the Cumulative Grade Point Average (CGPA) based on student's performance in examinations.

3. DEFINITION AND NOMENCLATURE

i. **Academic Year**: Two consecutive (one odd + one even) semesters constitute one academic year.

ii. **Choice Based Credit System (CBCS):** The CBCS provides choice for students to select from the prescribed courses (core, elective or minor or soft skill courses).

iii. **Course**: Usually referred as paper which is a component of a programme. All courses need not carry the same weight. The courses should define learning objectives and learning outcomes. A course may be designed to comprise lectures/ tutorials/laboratory work/ field work/ outreach activities/ project work/ vocational training/viva/ seminars/ term papers/assignments/ presentations/ self-study etc. or a combination of some of these.

iv. **Credit**: A unit by which the course work is measured. It determines the number of hours of instructions required per week. One credit is equivalent to one hour of teaching (lecture or tutorial) or two hours of practical work/field work per week.

v. **Grade Point**: It is a numerical weight allotted to each letter grade on a 10-point scale.

vi. **Credit Point**: It is the product of grade point and number of credits for a course.

vii. **Letter Grade**: It is an index of the performance of students in a said course. Grades are denoted by letters O++,O+,O, A++,A+, A, B+, B, C and RA

viii. **First Attempt**: A student who has completed all formalities of the semester becomes eligible to attend the examinations and has passed in first sitting: such attempt shall be treated as first attempt.

ix. **Programme**: An educational programme leading to award of a Degree, diploma or certificate.

xi. **Semester Grade Point Average (SGPA)**: It is a measure of performance of work done in a semester. It is ratio of total credit points secured by a student in various courses registered in a semester and the total course credits taken during that semester. It shall be expressed up to two decimal places.

xii. **Cumulative Grade Point Average (CGPA)**: It is a measure of overall cumulative performance of a student over all semesters. The CGPA is the ratio of total credit points secured by a student in various courses in all semesters and the sum of the total credits of all courses in all the semesters. It is expressed up to two decimal places.

xiii. **Semester**: Each semester will consist of 100 working days. The odd semester may be scheduled from June to November and even semester from December to April.

4. PROGRAM OUTCOMES

The post graduate who completes the program successfully will be able to

- Demonstrate competency, reflection and autonomous physiotherapy practice with proper assessment, decision making, justification and execution of physiotherapeutic procedures precisely based on need.
- Demonstrate advanced knowledge and skills in evaluation, diagnosis and rehabilitation in his/her discipline of study
- Demonstrate evidence informed Physiotherapy practice effectively
- Demonstrate Professionalism and Ethical values in Physiotherapy practice
- Demonstrate effective knowledge, skill and attitude transfer as a Teacher, Facilitator Guide and Counselor
- Perform research independently and demonstrate effective scientific writing skills
- Demonstrate effective leadership and team building skills
- Demonstrate lifelong commitment to learning and professional development.
- Demonstrate social responsibility, community engagement and entrepreneurship skills

5. DURATION OF THE PROGRAMME

The duration of the program is 2 years with 4 academic semesters.
The maximum duration permitted for a candidate to complete the Master of Physiotherapy degree program is four years from the date of joining the program.

6. MEDIUM OF INSTRUCTION:

The medium of instruction for all the courses of study and for examination of the program shall be English.

7. FEE STRUCTURE

The fee structure of this programme shall be fixed by the Committee appointed for this purpose by VMRF (DU) from time to time.

8. ADMISSION ELIGIBILITY:

Candidates belonging to all categories for admission into the Master in physiotherapy course should have passed the B.P.T. degree examination of this university or an examination of any other university accepted by the authority of this university as equivalent thereto.

9. ADMISSION PROCEDURE

Admissions are made purely based on the merit in the Qualifying examination for the program.

10. REGISTRATION

A candidate admitted to the program shall register with this University by remitting the prescribed fees along with the application form for registration duly filled in and forwarded to this University through the Head of the Institution within 40 days from the date of admission.

11. COMMENCEMENT OF THE PROGRAM

The program shall commence not later than 10th June of an academic year.

The candidates are admitted only up to 31st June and shall be registered to take up their first semester examination during November of the same year.

12. WORKING DAYS DURING THE SEMESTER

Each semester shall consist not less than 100 working days.

13. MIGRATION/TRANSFER OF CANDIDATES

Migration/Transfer of candidates shall be granted as per the regulations of Vinayaka Mission's Research Foundation – Deemed to be University, subject to the approval of the Vice Chancellor.

14. BREAK OF STUDY

i) Break of study may be permitted for genuine reasons like serious health problems and calamitous family situations. The Vice-Chancellor and Head of the institution are vested with the power to grant permission to rejoin after the break of study for which the candidate must apply and enclose necessary supporting documents and fee through his/her Head of the institution, sufficiently ahead of the proposed period of break. A break of study may cast for a period of less than 6 months or more than 6 months up to five years

ii) The Head of the institution shall approve the break of study if the period is less than 6 months

iii) In case, the break of study is more than 6 months up to five years, then the candidate shall obtain the prior approval from the Vice-Chancellor based on the recommendations of Head of the institution.

iv) The period of break of study of the candidate for rejoining the programme shall be calculated from the date of commencement of the first discontinuance of the programme.

v) A maximum two spells of break of study for Master of Physiotherapy programme shall be allowed for the entire duration of the programme. Any further break of study shall entail the candidate to be de-registered and his/her admission stands cancelled.

15. PROCEDURE FOR REJOINING AFTER BREAK OF STUDY

For Master of Physiotherapy Degree programme the Candidate having availed a break of study between 6months to 5 years shall apply for rejoining the programme in the prescribed form as in (ANNEXURE - I) by remitting the stipulated fee for condonation of break of study to the VMRF(DU) through the Head of the Institution of the concerned college for issue of necessary permission to rejoin the programme. The concerned Head of the Institution of the College shall not permit any candidate with a Break of study as stipulated above to rejoin the programme without obtaining the prior permission from the authorities of the VMRF(DU).

All the Master of Physiotherapy Students shall execute a declaration at the time of registration with this university in this regard in the prescribed form as in ANNEXURE–II.

16. PROGRAM STRUCTURE

The program duration is 2 years consisting of four semesters.

An academic year consists of two semesters.

	Odd semester	Even semester
PG	**June to November**	**December to April**
(MPT)	1st and 3rd semesters	2nd and 4th semesters

TYPES OF COURSES:

Courses in the programme may be of three kinds:

Core Course
Elective Course
Ability Enhancement Course

CORE COURSE: A course, which should compulsorily be studied by a candidate as a core requirement is termed as a Core course. There may be a **Core Course** in every semester. This is the course which is to be compulsorily studied by a student as a core requirement to complete the requirement of a programme in a said discipline of study. The student will have to appear for University examinations for these courses.

ELECTIVE COURSE: Generally a course which can be chosen from a pool of courses and which may be very specific or specialized or advanced or supportive to the discipline/ subject of study or which provides an extended scope or which enables an exposure to some other discipline/subject/domain or nurtures the candidate's proficiency/skill is called an Elective Course.

- **Discipline Specific Elective (DSE) Course**: Elective courses offered by the main discipline/subject of study are referred to as Discipline Specific Elective. The University / Institute may also offer discipline related Elective courses of interdisciplinary nature. An elective may be **"Discipline Specific Electives (DSE)"** focusing on those courses which add generic proficiency to the students.
- **Generic Elective (GE) Course**: An elective course chosen generally from an unrelated discipline/subject, with an intention to seek exposure is called a Generic Elective.

The student will have to appear for examinations at College level for these courses.

ABILITY ENHANCEMENT COURSES (AEC): The Ability Enhancement (AE) Courses may be of two kinds: Ability Enhancement Compulsory Courses (AECC) and Skill Enhancement Courses (SEC).

- **Ability Enhancement Compulsory Courses (AECC):** These are the courses based upon the content that leads to Knowledge enhancement.

- **Skill Enhancement Courses (SEC):** SEC courses are value-based and/or skill-based and are aimed at providing hands-on-training, competencies, skills, Indian and foreign languages etc. These courses may be chosen from a pool of courses designed to provide value-based and/or skill-based knowledge.

The student will have to appear for examinations at College level for these courses.

CALENDAR OF EVENTS

The calendar of events in respect of the program for each respective academic year shall be determined and notified by the university from time to time. The examinations shall be conducted at the end of each semester.

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LIST OF CORE COURSES OFFERED BY VMRFDU FOR MPT PROGRAM			
Sl .No	Program year	Odd Semester	Even Semester
1.	First year	**1st semester – Core courses**	**2nd semester – Core courses**
		1. Professional practice 2. Education for Health care Professionals 3. Research Methodology and Biostatistics.	1. Biomechanics 2. Exercise Physiology & Nutrition 3. Electrophysiology & Electro-diagnosis
2.	Second year	**3rd semester – Core courses**	**4th semester – Core courses**
		1.. Physiotherapy Diagnosis & Clinical decision making 2 Advanced Physiotherapeutics 3. Speciality Paper - I	1. Speciality Paper - II **SPECIALITY OPTIONS** 1. Musculoskeletal and Sports Physiotherapy 2. Neurological Physiotherapy. 3. Cardio- Respiratory Physiotherapy 4. Pediatric Physiotherapy 5. Obstetrics and Gynaecological Physiotherapy 6. Community Physiotherapy

LIST OF ABILITY/SKILL ENHANCEMENT COURSES
OFFERED BY VMRF DU FOR MPT PROGRAM (Compulsory)

ABILITY ENHANCEMENT COURSES

Semester	Title	Credits
First	Administration	2
First	Intellectual Property Rights	2
Second	Entrepreneurship education	2
Second	Social responsibility and Community engagement	2

SKILL ENHANCEMENT COURSES

Semester	Title	Credits
First	Suctioning Skills	2
Second	Diagnostic Imaging	2

GENERIC / DISCIPLINE SPECIFIC ELECTIVE COURSES

LIST OF GENERIC / DISCIPLINE SPECIFIC ELECTIVE COURSES OFFERED FOR MPT PROGRAM		
Semester	Course Title	Credits
Third GENERIC ELECTIVE	Personality development & Stress management	2
	Counseling & Guidance	
	Communication & Soft Skills	
Third DISCIPLINE SPECIFIC ELECTIVE	Yoga for Health & Wellness	2
	Naturopathy	
	Occupational and Speech therapy	
Fourth DISCIPLINE SPECIFIC ELECTIVE	Ergonomics & Industrial Physical therapy	2
	Disability Evaluation and Compensation	
	Diabetic Education and Management	
Fourth DISCIPLINE SPECIFIC ELECTIVE	Oncological Physiotherapy	2
	Geriatric Physiotherapy	
	Physiotherapy in Hand conditions	

DISTRIBUTION OF CREDITS AND COURSE HOURS

1st year – 1st semester

Course No	Course title	Hours per semester			Hours/week		Credits		Total credits
		Total	L	P	L	P	L	P	
Core courses									
	Professional practice	75	45	30	3	2	3	1	4
	Education for Health care professionals	75	45	30	3	2	3	1	4
	Research Methodology and Biostatistics	105	45	60	3	4	3	2	5
(**Ability Enhancement / Skill Enhancement Courses – Compulsory)**									
Course No	Course title	Hours per semester			Hours/week		Credits		Total credits (Max)
		Total	L	P	L	P	L	P	
	Administration	30	30	0	2	0	2	0	2
	Intellectual Property Rights	30	30	0	2	0	2	0	2
	Suctioning Skills	45	15	30	1	2	1	1	2
Clinical /Others									
	Clinical Education/Training	240	0	240	0	16	0	8	8
	Total hours / credit	600							27

1st year – 2nd semester

Course No	Course title	Hours per semester			Hours/week		Credits		Total credits
		Total	L	P	L	P	L	P	
Core courses									
	Biomechanics	105	45	60	3	4	3	2	5
	Exercise Physiology & Nutrition	105	45	60	3	4	3	2	5
	Electrophysiology & Electro-diagnosis	105	45	60	3	4	3	2	5

(**Ability Enhancement / Skill Enhancement Courses – Compulsory)**									
Course No	Course title	Hours per semester			Hours/week		Credits		Total credits (Max)
		Total	L	P	L	P	L	P	
	Entrepreneurship education	30	30	0	2	0	2	0	2
	Social responsibility and Community engagement	30	30	0	2	0	2	0	2
	Diagnostic Imaging	45	15	30	1	2	1	1	2

Clinical / Others									
	Clinical Education/Training	180	0	180	0	12	0	6	6
	Total hours / credit	600							27

2nd Year - 3rd Semester

Course No	Course title	Hours per semester			Hours/week		Credits		Total credits
		Total	L	P	L	P	L	P	
Core courses									
	Physiotherapy Diagnosis & Clinical decision making	120	30	90	2	6	2	3	5
	Advanced Physiotherapeutics	120	30	90	2	6	2	3	5
	Speciality Paper – I	120	30	90	2	6	2	3	5

Generic Elective Courses (Minimum one)									
Course No	Course title	Hours per semester			Hours/week		Credits		Total credits (Max)
		Total	L	P	L	P	L	P	
	Personality development & Stress management	30	30	0	2	0	2	0	2
	Counselling & Guidance	30	30	0	2	0	2	0	
	Communication & Soft Skills	30	30	0	2	0	2	0	

Discipline Specific Elective Courses (Minimum one)									
Course No	Course title	Hours per semester			Hours/week		Credits		Total credits (Max)
		Total	L	P	L	P	L	P	
	Yoga for Health & Wellness	45	15	30	1	2	1	1	2
	Naturopathy	45	15	30	1	2	1	1	
	Occupational and Speech therapy	45	15	30	1	2	1	1	
Clinical / Others									
	Clinical Education / Training	90	0	90	0	6	0	3	3
	Dissertation/Project	60		60		4		2	2
	Total hours / credit	585							24

2rd year - 4th Semester

Course No	Course title	Hours per semester			Hours/week		Credits		Total credits
		Total	L	P	L	P	L	P	
Core courses									
	Speciality Paper II	210	90	120	6	8	6	4	10

Discipline Specific Elective Courses (Minimum one)									
Course No	Course title	Hours per semester			Hours/week		Credits		Total credits (Max
		Total	L	P	L	P	L	P	
	Ergonomics & Industrial Physical therapy	45	15	30	1	2	1	1	
	Disability Evaluation & Compensation	45	15	30	1	2	1	1	
	Diabetic Education and Management	45	15	30	1	2	1	1	2

Discipline Specific Elective Courses (Minimum one)									
Course No	Course title	Hours per semester			Hours/week		Credits		Total credits (Max
		Total	L	P	L	P	L	P	
	Oncological Physiotherapy	45	15	30	1	2	1	1	
	Geriatric Physiotherapy	45	15	30	1	2	1	1	2
	Physiotherapy in Hand conditions	45	15	30	1	2	1	1	
Clinical / Others									
	Clinical Education / Training	240	0	240	0	16	0	8	8
	Project	60	0	60	0	4	0	2	2
	Total	600							24

COURSE WISE DISTRIBUTION OF MARKS

Semester- I

	COURSE WISE DISTRIBUTION OF MARKS						
		Core Courses	Internal assessment	University / College examination			Grand total
SL No	**Paper**	**Course**		**T**	**V**	**P**	
1.	Paper-I	Professional practice	50	100	--	--	150
2.	Paper-II	Education for Health care Professionals	50	100	--	--	150
3.	Paper – III	Research Methodology and Biostatistics	50	100	--	--	150
Ability Enhancement Courses - AEC (Compulsory) / Skill Enhancement Courses – SEC (Compulsory)							
4.	Paper- IV	Administration	10	40	--	--	50
5.	Paper- V	Intellectual Property Rights	10	40	--	--	50
6.	Paper-VI	Suctioning Skills	10	20	--	20	50
	***T= Theory *P = Practical *V = Viva-voce**						

Semester- II

	COURSE WISE DISTRIBUTION OF MARKS						
		Core Courses	Internal assessment	University / College examination			Grand total
SL No	**Paper**	**Course**		**T**	**V**	**P**	
1.	Paper-I	Biomechanics	50	100	--	-	150
2.	Paper-II	Exercise Physiology & Nutrition	50	100	--	-	150
3	Paper-III	Electrophysiology & Electro-diagnosis	50	100	--	-	150
	Ability Enhancement Courses - AEC (Compulsory) / Skill Enhancement Courses – SEC (Compulsory)						
4.	Paper-IV	Entrepreneurship education	10	40	--	--	50
5.	Paper-V	Social responsibility and Community engagement	10	40	--	--	50
6.	Paper-VI	Diagnostic Imaging	10	20	--	20	50
	***T= Theory *P = Practical *V = Viva-voce**						

Semester- III

	COURSE WISE DISTRIBUTION OF MARKS						
		Core Courses	Internal assessment	University / College examination			Grand total
SL No	**Paper**	**Course**		**T**	**V**	**P**	
1.	Paper-I	Physiotherapy Diagnosis & Clinical decision making	50	100	25	75	250
2.	Paper-II	Advanced Physiotherapeutics	50	100	25	75	250
3	Paper III	Speciality Paper – I	50	100	25	75	250
	Generic Elective Courses (Minimum one)						
4.	Paper-IV	Personality development & Stress management	10	40	--	--	50
5.	Paper - V	Counselling & Guidance	10	40	--	--	50
6.	Paper - VI	Communication & Soft Skills	10	40	--	--	50
	Discipline Specific Elective Courses (Minimum one)						
7.	Paper-VII	Yoga for Health & Wellness	10	20	--	20	50
8.	Paper-VIII	Naturopathy	10	20	--	20	50
9.	Paper-IX	Occupational and Speech therapy	10	20	--	20	50
	***T= Theory *P = Practical *V = Viva-voce**						

Semester- IV

	COURSE WISE DISTRIBUTION OF MARKS						
		Core Courses	Internal assessment	University / College examination			Grand total
SL No	**Paper**	**Course**		**T**	**V**	**P**	
1.	Paper-I	Speciality Paper - II	50	100	25	75	250
2.	Paper-II	Project	50	50	50	--	150
	Discipline Specific Elective Courses (Minimum one)						
3.	Paper-III	Ergonomics & Industrial Physical therapy	10	20	--	20	50
4.	Paper - IV	Disability Evaluation & Compensation	10	20	--	20	50
5.	Paper - V	Diabetic Education and Management	10	20	--	20	50
	Discipline Specific Elective Courses (Minimum one)						
6.	Paper-VI	Oncological Physiotherapy	10	20	--	20	50
7.	Paper-VII	Geriatric Physiotherapy	10	20	--	20	50
8.	Paper-VIII	Physiotherapy in Hand conditions	10	20	--	20	50
	***T= Theory *P = Practical *V = Viva-voce**						

17. EXAMINATIONS

i) Commencement of Examination

November 15th and April 15th

If the dates of commencement of the examination falls on Sundays or declared public holidays, the examination shall begin on the next working day.

ii) Attendance

A candidate has to secure minimum

1. 80% attendance in theory
2. 80% in Skills training (practical)

for qualifying to appear for the final examination.

No relaxation, whatsoever, will be permissible to this rule under any ground including indisposition etc.

a. No candidate shall be permitted to appear for any one of the parts of Master of Physiotherapy Examination unless he / she has attended the program in the course for the prescribed period in the institution of this University and produces the necessary certificate of study, attendance, satisfactory conduct and progress from the Head of the Institution.
b. A candidate is required to put in minimum 80% of attendance in both theory and practical separately in each course before admission to the examination.
c. A candidate lacking in the prescribed attendance and progress in any one course in theory and practical shall not be permitted for admission to the entire examination in the first appearance.

iii) Regulations for Condonation of Lack of Attendance.

Condonation of shortage of attendance up to a maximum of 10% prescribed eligible attendance for admission to an examination rests with the discretionary powers of the Vice-Chancellor**.** A candidate lacking in attendance should submit an application in the prescribed form and remit the stipulated fee, 15 days prior to the commencement of theory examination. The Head of the Department and Head of the institution should satisfy themselves on the reasonableness of the candidate's request while forwarding the application with their endorsements to the Controller of Examinations, who would obtain the approval of the Vice-Chancellor for admission of the said candidate to the examination. No application would be considered if it is not forwarded through proper channel.

Application for condonation of lack of attendance shall be taken up for consideration on the following grounds:

1. Any illness afflicting the candidate. (The candidate should submit to the Head of the Institution a Medical Certificate from a registered Medical Practitioner soon after he returns to the Institution after treatment.)
2. Any unforeseen tragedy in the family. (The parent / Guardian should give in writing the reason for the ward's absence to the Head of the Institution).

3. Participation in NCC/NSS and other co-curricular activities representing the Institution or University. (The Head of the Institution should instruct the concerned officers in-charge of the student activities in their institution to endorse the leave)
4. Any other leave the Head of the Institution deems reasonable for condonation.

iv) Format for furnishing details of candidates in whose cases condonation of shortage of attendance has been granted for theory examination

Name of the college: Faculty of Physiotherapy, Vinayaka Mission's Research foundation & deemed University

Academic year for which condonation has been granted for:

S.No	Name of the candidate(s)	Name of the program and Branch	Total No. of working days /hours for the year / semester	Minimum No. of days required for attendance certificate (80%)	No. of days attended by the candidate	Actual shortage of attendance

Requested condonation of attendance in respect of the above candidates as the shortage of attendance is within the condonation limit.

The demand draft for Rs…… being the condonation fee of shortage of attendance, drawn in favour of the Registrar, the Vinayaka Mission's Research foundation – Deemed university, Salem is/are enclosed

Date: Signature of the Principal with college seal

Place: Signature of the Head of the University

Department Seal:

Note:

1. The fee prescribed for condonation of shortage of attendance as specified by the university shall be paid by the student
2. The forms should reach the university at least 15 days before the commencement of respective university examinations.
3. A separate list (Three copies degree wise) showing candidates who have not earned the required attendance and are not eligible for condonation should also be sent at least 15 days before the commencement of examination

v) Scheme of Examination:

The scheme of the examination is semester wise. The two years course period consists of four semesters. There shall be two internal assessment examinations in each semester followed by University examination at the end of each semester.

vi) Assessment

Assessments should be completed by the academic staff, based on the compilation of the student's theoretical &clinical performance throughout the training program. To achieve this, all assessment forms and feedback should be included and evaluated.

vii) Internal Assessment:

a. A minimum of two written examinations shall be conducted in each course during a semester and the average marks of the best two performances shall be taken into consideration for the award of sessional marks.
b. A minimum of two practical examinations shall be conducted in each course during a semester and an average of two best performances shall be taken into consideration for award of sessional marks.
c. Failed candidates in any course both theory & practical shall be provided an opportunity to improve his/her sessional marks during his/her additional period of study by applying in a prescribed form to the university at the beginning of the additional period of study. A minimum of two theory or practical examinations shall be conducted in each course during the additional period and an average of two best performances shall be taken into consideration for award of internal assessment marks.
d. The internal assessment marks (both in written and practical) should be submitted to the university endorsed by the Principal of the college 15days prior to the commencement of theory examinations.
e. The candidate has to secure 35% out of marks prescribed for the Internal examinations to become eligible for the final examination of the concerned course.

viii) Criteria for Awarding Internal Marks:-

Internal marks will be awarded for a maximum of 50 for all the courses were internal evaluation is applicable

1. Written exam – 20 marks
2. Practical demonstration / Viva – 20 marks
3. Assignment /Record work – 10 marks

Internal marks will be awarded for a maximum of 50 for the project work

1. Written work - 20 marks
2. Viva - 20 marks
3. Participation /Involvement - 10 marks

ix) Criteria for Awarding Internal Marks for AEC / SEC/ DSE:-

Internal marks will be awarded for a maximum of 10 marks for all the courses under AEC/SEC/DSE courses . Each course will have two assignments and each assignment will carry 5 marks each.

x) Criteria to become eligible for University Examinations – Semester wise

I Semester	**II Semester**
• Minimum 80% attendance in Theory & Practical separately • Minimum 35% in Internal assessment • Three days workshop on Research Methodology & Biostatistics • Two seminars for Undergraduate students using innovative teaching methodologies • One Conference participation • One Library Dissertation • Two Case presentations • One Journal discussion • Two Camp participation • Logbook submission	• Minimum 80% attendance in Theory & Practical separately • Minimum 35% in Internal assessment • Two workshops in area of interest • Two seminars for Undergraduate students using innovative teaching methodologies • One Conference paper/poster presentation • One Library Dissertation • Two Case presentations • One Journal discussion • Two Camp participation • Logbook submission
III Semester	**IV Semester**
• Minimum 80% attendance in Theory & Practical separately • Minimum 35% in Internal assessment • One workshop in Manual Therapy • One workshop in Elective speciality • Two seminars for Undergraduate students using innovative teaching methodologies • One Conference paper/poster presentation • One Library Dissertation • Two Case presentations • One Journal discussion • Two Camp participation • Logbook submission • Project synopsis approval and ethical clearance	• Minimum 80% attendance in Theory & Practical separately • Minimum 35% in Internal assessment • Two workshops in Elective speciality • Two seminars for Undergraduate students using innovative teaching methodologies • One paper publication in indexed journal • One Library Dissertation • Two Case presentations • One Journal discussion • Two Camp participation • Logbook submission • Project submission after plagiarism check

xi) Conduct of Practical Examination

The practical examination shall commence immediately after final theory examination. The practical examination shall be conducted by 2 examiners who are experts in their courses, one of them shall be an internal examiner and one of them shall be an external examiner. The external examiner shall be selected from an available panel of examiner list. The external examiner shall have preferably 5 years teaching experience after MPT from a recognized university and the internal examiner shall have a minimum of 3 years of teaching experience from the respective College of Physiotherapy.
Each practical examination shall be jointly conducted and evaluated by one internal examiner and one external examiner or two external examiners if there are no internal examiners.

xii) Distribution of Marks In University Theory Exam

MAX.MARKS : 100		
Short Answers	- 10 x 3	= 30
Essay	- 2 x 15	= 30
Short Essays	- 8 x 5	= 40

xiii) Marks qualifying for pass

a) Core Courses: 50% of marks in theory and practical separately and an overall aggregate of 50% is required.

b) AEC/SEC/DSE Courses: The minimum prescribed marks for a pass in a AEC/SEC/DSE courses shall be an aggregate of 50% of the maximum marks prescribed for a course.

xiv) Carry-over of failed courses

a. A Candidate is permitted to go to all the subsequent semesters if he/she fails in any of the previous semester courses.

xv) Exemption from Re-Examination in a Course

Candidate who have failed in the examination but obtained pass marks in any course shall be exempted from re-examination in that course.

xvi) Review of answer papers of failed candidates

There shall be no retotalling / revaluation of answer papers of failed candidates in M.P.T. degree examinations

18. CLASSIFICATION OF SUCCESSFUL CANDIDATES (COURSEWISE)

% of marks	Grade point	Letter Grade	Result/ Class Description
95 -100	10	O ++	FIRST CLASS WITH DISTINCTION
90 - 94	9.5	O+	
85 - 89	9	O	
80 - 84	8.5	A++	
70 - 79	8	A+	
60 - 69	7	A	FIRST CLASS
55-59	6	B+	SECOND CLASS
51-54	5.5	B	
50	5	C	PASS
<50	-	U	REAPPEAR
ABSENT	-	AB	

19. CRITERIA FOR THE AWARD OF DEGREE:

A candidate shall be eligible for the award of the degree of Master of Physiotherapy, only if he/she has earned the minimum required credits of the programme prescribed.
The provisional certificate shall be issued after successful completion of the programme and passing all the courses. This provisional certificate has validity till the issue of the degree certificate which shall be issued during the Convocation.

20. CLASSIFICATION OF SUCCESSFUL CANDIDATES (PROGRAMWISE)

For the purpose of declaring a candidate to have qualified for the degree of Master of physiotherapy in the first class/ second class or first class with distinction, the CGPA earned by the candidate at the end of courses will be as given below.

CGPA	Classification of Final Result
7.00 – 10.0	First Class with Distinction
6.00-6.99	First Class
Below – 5.99	Second Class

*Note: For the best outgoing / Gold Medal / Distinction / Ranking students, one should have passed all the subjects in the first appearance.

21. RANKING

The first three ranks will be decided on the basis of grades of CGPA in the program. Candidates who passed all the courses of the programme in University examination in first appearance will only be considered for ranking.

22. VACATION

The Head of the Institution may declare 45 days of vacation in an academic year to the students without a semester break. The period(s) of vacation can be decided by the Head of the Institution.

23. ADOPTION OF SWAYAM

Candidate will be given credit for the successful completion of SWAYAM online programmes when the candidate submits the certificate of completion**.**

24. MODIFICATION OF REGULATIONS

These regulations shall come into force with effect from the academic year 2021-2022 and are subject to such modifications as may be approved by the Academic Council from time to time.

ANNEXURE – I

CONDONATION PROFORMA FOR RE-ADMISSION AFTER BREAK OF STUDY

1	Name of the student	:	
2	Name of the course	:	
3	Period of study	:	
4	Name of the College	:	
5	Date of joining the course	:	
6	Whether the candidate has been Registered with this University? If so, furnish the Registration No.	:	
7	Present year of study	:	
8	Total No. of working days attended during that particular academic year	:	From : To :
9	Duration of break of study	:	From : To :
10	Details of examinations appeared & Subjects passed (Evidence should be produced)	:	
11	Reasons for the period of break of study of the course (Evidence should be produced)	:	
12	The details of previous break of study (Enclose Xerox copy of the Condonation order of the University, if any)	:	
13	Whether his/her own vacancy is available for rejoining the course	:	
14	Whether any disciplinary case is pending (i.e) production of false certificates/ Ragging etc.	:	
15	Whether the candidate has paid the Prescribed fee for readmission sought For	:	

(Furnish) the details)

a) Processing fee : Rs.2100/- ,
b) Condonation fee :
   As prescribed in the Annexure

15 Previous Correspondence if any (Furnish copies of relevant records) :

17 Recommendation of the Dean/Principal Concerned :

DECLARATION BY THE CANDIDATE

I declare that the above informations furnished by me are true, correct to the best of my knowledge.

I hereby Undertake that I will abide by the existing rules and regulations of this university.

Date:

Signature of the Candidate

Certificate by the Dean / Principal

Certified that the details furnished above, in respect of the candidate are verified and found to be correct.

Signature of the Dean/Principal with seal

ANNEXURE – II

DECLARATION

I …….. Son of / Daughter of ……. Residing at…….……. ……..……...…….…… ……..…… ……and admitted to in I year of ……...……..…..……. (Name of the Faculty) do hereby solemnly affirm and sincerely state as follows.

I declare that I shall abide by the Rules and Regulations prescribed by the Vinayaka Mission's Research Foundation (Deemed to be University), Salem for the …….. (Programme) including regulations in force after amendment.

Date:

Signature of the Candidate

/Counter signed/

Principal / Dean

(Office date seal)

MASTER OF PHYSIOTHERAPY PROGRAM
AT
VINAYAKA MISSION'S RESEARCH FOUNDATION

DEEMED TO BE UNIVERSITY

CURRICULUM & SYLLABUS

FOR MPT REGULATIONS 2021

FROM ACADEMIC YEAR
2021- 22 ONWARDS

PROFESSIONAL PRACTICE

I SEMESTER

COURSE DESCRIPTION

- In this course, the student will learn about ethics and laws, human dignity and rights, professional competency, role of professional bodies and planning and managing a Physiotherapy department under Professional practice.

Course title : Professional Practice
Duration : 0 – 6 months
Total hours : 75 hours
Theory : 45 hours
Practical : 30 hours
Total hours/Week : 5 hours

COURSE OUTCOMES

At the end of this course, the student will able to

- Demonstrate the laws and ethics in Physiotherapy effectively.
- Discuss about Human dignity and Human rights and list the benefit and harm of patient's right & dignity in Healthcare settings by physiotherapy
- Demonstrate the competency required as a Physiotherapy professional
- Explain the role of Professional bodies to regulate professional practice.
- Demonstrate planning, development and administration of a physiotherapy department in precisely.

COURSE OUTLINE

1. Introduction to ethics & bioethics

Meaning, nature of ethics, ethical statements, Meaning of bioethics, Health & disease as values and facts, Principles of bioethics, Medical ethics- goals, committees, Ethical issues in practice of physiotherapy-Clinical, Research and Academics. Administration,legislation, rules and regulations governing physiotherapy practice- Scope of Physiotherapy in Hospital, Community & Industry.

2. Laws

Constitution of India, & Rights of a citizen, responsibilities of the Therapist, & status in health care – Persons with Disability Act , Consumer protection act. Medico legal aspects of physiotherapy, liability, negligence, malpractice, licensure, workman's compensation.

3. Human dignity and human rights

Human dignity as an intrinsic value, Respect, care and Equality in dignity of all humanbeings, Human dignity in different cultural and moraltraditions, Ethical aspects of physiotherapists in patients relation in regardto human dignity in handling children, women, elderly ,mentally & Physically challenged.

4. Benefit and harm of patient's right & dignity in Healthcare settings by physiotherapy

The WHO definition of health as a possiblesolution of health problems, Health benefit by physiotherapy, Possible harm for a patient during physiotherapy, Dimensions of comparing harms and benefits in individual patients

5. Professional Competency

- History taking, assessment, tests, Patient communication, documentation of findings, treatment organization and planning/execution for intervention.
- Documentation of rehabilitation assessment and management using International Classification of Functioning Disability and Health (ICF)
- Standardized tests and scales used in various types of cases for assessment and interpretation inPhysiotherapy practice.
- Communication skills, Client interest and Satisfaction.
- Inter Disciplinary Relation, Co-partnership, Mutual Respect, Confidence and Communication, Responsibilities of the Physiotherapists, Status of Physiotherapist in Health Care.
- Role of Professional in Socio Personal and Socio Economical context.

6. Role of Professional bodies

- Indian association of physiotherapists: rules, regulations, framework, aims, and objectives.Self- Regulatory role of Professional Association.
- Rules of Professional Conduct.
    - Role of WCPT, Various branches and special interest group of WCPT
    - Role of W.H.O.
- Need of Council Act for regulation of Professional Practice.

7. Physiotherapy department planning & management

Policies and procedure- recruitment, interview, orientation probationary period, salary hours of work, leave facilities, retirement, referred policy, equipment maintenance records, statistics functioning, department planning design and construction, planning and innovation, growth and expansion, type and size of hospital, services and activities, space requirements, number of functional area elements, occupancy time, gymnasium, patient waiting areas, storage facilities, lighting and floor surfaces.

EDUCATION FOR HEALTH CARE PROFESSIONALS

I SEMESTER

COURSE DESCRIPTION

In this course, the student will learn about aims of education, concepts of teaching learning process, various teaching methods, curriculum development & evaluation, principles, types and concepts of guidance & counseling and administration of Physiotherapy curriculum and accreditation of physiotherapy educational institutions

Course title : Education for Health care professionals Duration : 0 – 6 months Total hours : 75 hours Theory : 45 hours Practical : 30 hours Total hours/Week : 5 hours

COURSE OUTCOMES

At the end of this course, the student will able to

- Describe education, its aims, implications and current trends effectively.
- Discuss the concepts of teaching learning process and various instructional strategies
- Demonstrate various teaching methods effectively.
- Demonstrate planning and construction of curriculum, lesson plan and various evaluation methods
- Demonstrate guidance & counseling precisely.
- Demonstrate administration of Physiotherapy curriculum and accreditation of physiotherapy educational institutions
- Demonstrate construction of graduate attributes, program outcomes, course outcomes and specific learning outcomes

COURSE OUTLINE

1. INTRODUCTION :

Education: Definition, aims, concepts, philosophies & their education implications, Impact of Social, economical, political & technological changes on education:

- Professional education
- Current trends and issues in education
- Educational reforms and National Educational policy, various educational commissions-reports
- Trends in development of Physiotherapy education in India

2. TEACHING – LEARNING PROCESS

Concepts of teaching and learning: Definition, theories of teaching and learning, relationship between teaching and learning.

Competency based education (CBE) and outcome based education (OBE)
Instructional design: Planning and designing the lesson, writing lesson plan: meaning, its need and importance, formats.

Instruction strategies – Lecture, discussion, demonstration, simulation, laboratory, seminar, panel, symposium, problem solving, problem based learning (PBL), workshop, project, role- play(socio- drama), clinical teaching methods, programmed instruction, self directed learning(SDL), micro teaching, computer assisted instruction(CAI), computer assisted learning (CAL)

3. CURRICULUM:

Curriculum committee, Types of curriculum, formation of philosophy, course objectives, course placement, time allotment,
Selection and organization of learning experience, Master plans of courses, Master rotational plan-individual rotational plan, correlation of current trends in curriculum planning, Evaluation strategies, process of curriculum change, role of students, faculty, administrators, statutory bodies and other stakeholders Equivalence of courses: Transcripts, credit system.

4. TEACHING METHODS

Principles and methods of teaching, Strategies of teaching, writing lesson Plans, Key concepts in the selection and use of media in education
Developing learning resource material using different media
Instructional aids – types, uses, selection, preparation, utilization.
Teacher's role in procuring and managing instructional Aids –
Project and non-projected aids, multi media, video-tele conferencing

5. EVALUATION

Nature of measurement and evaluation, meaning, process, standardized & non-standardized tests- formative and summative evaluation.
Taxonomy of cognitive, affective and psycho motor domains.
Construction of achievement test - Essay type short answers Multiple Choice Questions

6. TEACHER PREPARATION

1. Teacher – roles & responsibilities, functions, characteristics, competencies, qualities, Preparation of professional teacher. Faculty development and development of personnel for physiotherapy services
2. Organizing professional aspects of teacher preparation programs
3. Evaluation: self and peer
4. Critical analysis of various programs of teacher education in India.

7. GUIDANCE AND COUNSELLING

Philosophy, principles and concepts, Need for guidance-objectives of guidance-kinds of guidance-educational, vocational, personal and social.
Types of counseling- directive, non-directive, eclectic and group counseling.
Guidance and counseling services for students

8. ADMINISTRATION OF PHYSIOTHERAPY CURRICULUM

1. Role of curriculum coordinator – planning, implementation and evaluation.
2. Evaluation of educational programs in Physiotherapy- course and program.
3. Factors influencing faculty staff relationship and techniques of working together.
4. Concept of faculty supervisor (dual) position.
5. Curriculum research in Physiotherapy.
6. Different models of collaboration between education and service

9. MANAGEMENT AND ACCREDITATION OF PHYSIOTHERAPY EDUCATIONAL INSTITUTIONS

1. Planning, organizing, staffing, budgeting, recruitment, discipline, public relation,performance appraisal, welfare services, library services and hostel.

2. Development and maintenance of standards and accreditation in Physiotherapyeducation programs.

3. Role of Indian Physiotherapy Council, State Registration Physiotherapy Councils,Boards and University.

RESEARCH METHODOLOGY & BIOSTATISTICS

I SEMESTER

COURSE DESCRIPTION

In this course, the student will learn about research process and criteria of good research, Research designs, Population, Sample and data collection methods, concept of scientific writing and research ethics under Research methodology. He/ She will learn about scope of statistics and data collection methods, statistical methods and probability & sampling methods, inferential statistics, vital & health statistics under Biostatistics

Course title: Research Methodology & Biostatistics
Duration : 0 – 6 months
Total hours : 105hours
Theory : 45 hours
Practical : 60 hours
Total hours/Week : 7 hours

COURSE OUTCOMES

- Elaborate the research process and criteria of good research in written format effectively.
- Demonstrate constructing a Research proposal effectively
- Demonstrate construction of Research designs,
- Demonstrate Population and Sample selection and execute data collection methods
- Demonstrate scientific writing and research ethics
- Explain the scope of statistics and demonstrate data collection methods effectively
- Demonstrate the statistical methods and probability & sampling methods efficiently.
- Demonstrate effective use of SPSS for analysis and interpretation

RESEARCH METHODOLOGY

COURSE OUTLINE

1. Research in Physiotherapy

a. Introduction
b. Research for Physiotherapist: Why? How? And When?
c. Research – Definition, concept, purpose, approaches
d. Internet sites for Physiotherapist

2. Research Fundamentals

a. Types of variables
b. Reliability & Validity
c. Drawing Tables, graphs, master chart etc

3. Writing a Research Proposal

a. Defining a problem
b. Hypothesis: function of hypothesis in quantitative research
c. Types of hypothesis, characteristics of testable hypothesis, wording of the hypothesis
d. Review of Literature
a. Formulating a question, Operational Definition
b. Inclusion & Exclusion criteria
c. Forming groups
d. Data collection & analysis
e. Results, Interpretation, conclusion, discussion
f. Informed Consent
g. Limitations

4. Research Design

a. Qualitative and Quantitative research designs
- Difference between qualitative and quantitative designs

b. Experimental designs
- Quasi experimental research; advantages and disadvantages of quasi experiments,

- Non experimental designs
  - Controlled trials
  -Parallel or concurrent controls
    - Randomized
    - Non randomized
    - Sequential controls
      - Self controlled
      - Crossover
      - External controls
      - Studies with no controls

c. Observational Study design
  - Descriptive or case series
  - Case control studies (retrospective)
  - Cross sectional studies, surveys
  - Cohort studies (prospective)
    -Historical Cohort studies

d. Meta analyses

5. Population and sample

a. Definition of population and sample
b. Types of sampling
c. Sample size determination and calculation
d. Sample rationale
e. Non-probability sampling ; convenience sampling , quota sampling, purposive sampling,advantages and disadvantages of non probability sampling
f. Probability sampling; Simple random sampling, stratified random sampling,
g. Cluster sampling, systematic sampling, advantages and disadvantages of probabilitysampling

6. Data collection methods

a. Scales and techniques of psychological measures
b. Research reliability, validity and criteria for assessing, measuring the tools
c. Presentation of data
d. Analysis and interpretation of research data
e. Role of computers
f. Pilot study

7. Interpretation of statistical results

a. Interpreting significant and non significant results
b. Discussion and conclusion of obtained results
c. Guidelines to interpret and critique research results

8. Scientific Writing

a. Definition and kinds of scientific documents – Research paper, Review paper, Book , Reviews, Thesis, Conference and project reports (for the scientific community and for funding agencies).

b. Publication – Role of author, Guide, Co-authors. Guidelines to publish a research paper and its contents

c. Structure, Style and contents; Style manuals (APA, MLA); Citation styles: Footnotes, References; Evaluation of research

d. Significance of Report writing; Different steps in Report writing; Mechanics and precautions of writing research reports Oral and poster presentation of research papers in conferences/symposia; Preparation of abstracts., Structure of Thesis and Content – Preparing Abstracts

9. Research Ethics

a. Importance of Ethics in Research, Ethical issues in human subjects, Ethicalprinciples that govern research with human subjects
b. Components of an ethically valid informed consent for research

BIOSTATISTICS

COURSE OUTLINE

1. Biostatistics

    a. Introduction
    b. Definition
    c. Types
    d. Application in Physiotherapy

2. Data

    a. Definition
    b. Types
    c. Presentation
    d. Collection methods
    e. Various types of graphs, obtaining graphs using statistical software like excel

3. Measures of central value

    a. Arithmetic mean, median, mode, Relationship between them
    b. Partitioned values- Quartiles, Deciles, Percentiles
    c. Graphical determination

4. Measures of Dispersion

    a. Range
    b. Mean Deviation
    c. Standard Deviation

5. Normal Distribution Curve

    a. Properties of normal distribution
    b. Standard normal distribution
    c. Transformation of normal random variables.
    d. Inverse transformation
    e. Normal approximation of Binomial distribution.

6. Correlation analysis

   a. Bivariate distribution
   b. Scatter Diagram
   c. Coefficient of correlation
   d. Calculation & interpretation of correlation coefficient
   e. T-test, Z-test, P-value

7. Regression analysis

   a. Lines of regression
   b. Calculation of Regression coefficient

8. Sampling

   a. Methods of Sampling b. Sampling distribution c. Standard error
   d. Types I & II error

9. Probability

   a. Probability and sampling
   b. Probability as a mathematical system
   c. Population and samples
   d. Sampling distribution
   e. Sampling methods
   f. Point and interval estimation for proportion mean
   g. Hypothesis testing, simple test of significance
   h. Inferential technique: normal

10. Hypothesis testing

   a. Null hypothesis
   b. Alternative hypothesis
   c. Acceptance & rejection of null Hypothesis
   d. Level of significance Alternative hypothesis
   e. Acceptance & rejection of null Hypothesis
   f. Level of significance

11. Parametric & Non parametric tests

a. Chi square test
b. Mann-Whitney U test
c. Wilcoxon Signed test
d. Kruskal-Wallis test
e. Friedman test
f. T-test/student T test g. Analysis of variance
g. Standard errors of differences
h. SPSS software application and Graph Software application

BIOMECHANICS **II SEMESTER**

COURSE DESCRIPTION

In this course, the student will learn the musculoskeletal physical properties, biomechanics and pathomechanics of spine, peripheral joints, cardiorespiratory, gait and ergonomics. It will introduce the student about physical properties of bone, muscles and normal cartilage,functional adaptations of bone under pathological conditions, mechanics of joint and muscle action, body balance and body equilibrium, biomechanics and pathomechanics of shoulder complex, elbow joint, wrist and hand, hip joint, knee, ankle and foot, spine, respiration, circulation and gait, clinical kinesiology of posture, kinetics and kinematics investigation methods, patient positioning, body mechanics, transfer techniques and ergonomics.

Course title : Biomechanics
Duration : 7 – 12 months
Total hours : 105 hours
Theory : 45 hours
Practical : 60 hours
Total hours/Week : 7 hours

COURSE OUTCOME:

At the end of the course the students will be able to

- Define the physical properties of bone, muscles and cartilage effectively.
- Discuss about mechanics of joint and muscle action.
- Explain the biomechanics and pathomechanics of spine, upper limb and lower limb joints effectively.
- Explain the biomechanics and pathomechanics of respiration, circulation and gait effectively.
- Demonstrate the methods of kinetics and kinematics investigation, clinical kinesiology of posture and ergonomics.
- Demonstrate patient positioning, transfer techniques, postural examination in the student model precisely.
- Demonstrate the role of physiotherapy in industrial set up and industrial therapy.

BIOMECHANICS

COURSE OUTLINE

1. PHYSICAL PROPERTIES OF BONE, CARTILAGE & MUSCLES:

a. Bone

Elasticity of bone, stress resistance of bone, compression, shearing and bending stress, torsion, Application of the theory of beam and column, effect of muscular tension on Gravitational stress in bone.

b. Cartilage

Stress and structure, elasticity, deformation and pressure, patho kinetics of cartilage

c. Muscle

Elasticity and contractility of muscle, Electro Physiology of muscle, contraction length, Physical properties of ligaments and tendons.

2. MECHANICS OF JOINT:

General mechanical principles, shape of the articular surfaces, joint contact, type of joint movement, degrees of freedom of motion, kinetic chain.

3. MECHANICS OF MUSCLE ACTION:

Stabilizing and rotatory components, leverage and equilibrium, morphological adaptation of muscle, co-ordination of skeletal muscle action, bi-articular muscles.

4. SHOULDER COMPLEX:

Anatomy of Shoulder Complex , Physiological movements of Shoulder, Dynamics of shoulder complex - Translatory movements of the shoulder blade, rotatory movement of the shoulder blade, physiology of adduction, scapulohumeral rotation.

Pathomechanics of paralytic shoulder:

Paralysis of the trapezius, paralysis of the serratus anterior, paralysis of Rhomboids, paralysis of deltoid, , paralysis of supraspinatus, paralysis of the subscapularis, paralysis of pectoralis major, paralysis of lattismusdorsi. Kinetic point of view – operations for paralysis of trapezius, serratus anterior, deltoid.

5. ELBOW JOINT:

Anatomy of Elbow Complex , Physiological movements of Elbow, Dynamics of elbow complex, position of function and compensatory movements.

Patho mechanics of paralytic elbow:

Paralysis of extensors of elbow, paralysis of flexors, transposition of forearm muscles, substitution by the triceps.

6. WRIST AND HAND:

Anatomy of Wrist Complex , Physiological movements of Wrist, Dynamics of wrist complex, scaphoid-lunate couple, Functional pattern of wrist motion, paralysis of wrist extensors, paralysis of wrist flexors.

Modes of prehension-Terminal opposition, subterminal opposition, subterminal – lateral opposition, tridigital grips, tetradigital grips, pentadigital grips, palmar grips, dynamic grips.

Pathokinetics of paralytic disabilities:

Paralysis of finger extensors and flexors, paralysis of interrossei and lumbricals, tendon transplantation in flexors and extensors. Arthrodesis of the wrist combined with tendon transplantation-kinetic analysis. Analysis of movements under open kinetic chain conditions – Ball Throwing, Discus throwing, shot putting, movement of the upper extremity in a closed kinetic chain, weight lifting and boxing.

7. HIP JOINT:

Movements of the hip and their ranges, movements of the circumduction of the hip, capsule and ligaments of the hip, muscular and bony factors

affecting stability of the hip. Inversion of muscle action. Architecture of femur, analysis of the static forces operating upon the femur, static pressure and shear effects produced by muscle action, muscle dynamics.

Pathomechanics:

Coxa valga- skeletal factors, mechanical muscle situation of coxa valga, pathomechanics of the dysplasia of hip joint, patho mechanics of fixed pelvic obliquity. Dynamics of pelvic obliquities in coxa vara. Paralysis of hip abductors, abductors, extensors and flexors, Internal and external rotators. Mechanics of reconstructive procedure of paralyzed hip joint – paralytic dislocation, Shelving operation, Legg's operation, substitution of the abductors by external oblique, substitution of gluteus maximus bysacrospinalis.

8. KNEE:

Axes of the knee joint, movements of the knees and its range of motion, ligaments of the knee, lesions of the menisci, transverse stability of the kneeanterior, posterior stability of the knee, mechanical role of cruciate ligaments, rotational stability of the knee, stress analysis of the bones, mechanics of menisci, muscle dynamics of the knee joint.

Pathomechanics of static deformities

Genu valgum- static factor, dynamic factor, static genu varum, static genu recurvatum, mechanics of tibial torsion.

Pathomechanics of the paralytic knee:

Extensor paralysis, Flexor paralysis of the knee, methods of reconstruction of genu recurvatum. Fasciodesis, Tenodesis, Osteoplastic – Arthrodesis, Reconstruction of the paralytic Genu valgum, reconstruction of flexor contracture.

9. ANKLE AND FOOT:

Anatomy of Ankle and foot complex, antero posterior stability of the ankle and factors limiting flexion and extension. Transverse stability of ankle tibiofibular joints, construction of the arches, Axes of the joint of the foot, internal architecture of the foot, ligamentous reinforcements of the articularis.

General architecture of the plantar vault, three arches of the plantar vault - medial arch, lateral arch, anterior arch, distribution of stresses and static distribution of the plantar vault, dynamic changes of the arches of the foot during working dynamic changes of the arches of the foot during working dynamic changes related to the medial and lateral rotation of the leg on the foot.

Pathomechanics or the static deformities of the foot and ankle:

Development factors, pathological equilibirium- pronated foot, instability of the subtalar joint, pathomechanics of the foot structures: pes cavus, pes planus.

Pathomechanics of the paralytic foot and ankle:

Talipesequinovarus sub talar joint, midtarsal joint, arthrodesis of paralytic joints for the establishment of equilibrium, stabilization of the ankle, single arthrodesis, double joint arthrodesis and three joint arthrodesis.

10. NORMAL AND APPLIED BIOMECHANICS OF SPINE

Structure and function including kinematics and kinetics of Various Vertebral joints. Factors affecting stability and mobility. Arthrology and Arthrokinematics and Pathomechanics of Spine. Effects of aging, exercise, Immobilization and injury

11. CLINICAL KINESIOLOGY OF POSTURE

Posture Control, Optimal Posture and their deviations in different planes Posture assessment in Standing, Sitting.

12. BIOMECHANICS AND PATHOMECHANICS OF RESPIRATION AND GAIT.

Respiratory mechanics – Mechanism of respiration , Boyle’s Law, Surface Tension , Compliance, Law of Laplace, Pathomechanics of Restrictive lung disorders

Gait:

a. Normal Gait and its determinants
b. Kinematic and Kinetic of normal human gait
c. Pathological gait

Gait Analysis.

a. Overview of normal gait analysis : kinetic and kinematic analysis; Description of some of the most commonly used types of observational gait analysis; Advantages and disadvantages of kinematic qualitative and kinematic quantitative gait analyses.
b. Gait Training, Pre ambulation programme, assistive devices and gait patterns, Recent advances in analysis of Gait
(c) Pathological gait and its biomechanical implications

13. ERGONOMICS:

Work capacity analysis, role of physiotherapy in industrial set up, job site paralysis, pre-employment screening, worker's functional capacity assessment, work hardening program, industrial therapy, postural examination, job task analysis, educational program for prevention of injury, adult education, and documentation.

EXERCISE PHYSIOLOGY & NUTRITION II SEMESTER

COURSE DESCRIPTION

In this course, the student will learn the physiological adaptations during exercise and adaptations due to prolonged exercise. It will introduce the student about structure and function of muscles, aerobic/anaerobic exercises, physical fitness tests, physical training, cardiovascular and respiratory adaptations of exercise, applied work physiology, fatigue, nutrition & physical performance and factors affecting performance

Course title : Exercise Physiology& Nutrition
Duration : 7 – 12 months
Total hours : 105 hours
Theory : 45 hours
Practical : 60 hours
Total hours/Week : 7 hours

COURSE OUTCOME:

At the end of the course the students will be able to

- Define the structure and function of muscles effectively.
- Demonstrate aerobic / anaerobic exercises and various training methods precisely
- Demonstrate Physical fitness tests precisely.
- Explain the adaptations of cardiovascular system and respiratory system due to exercise
- Demonstrate the application of work physiology effectively.
- Explain the role of nutrition in Physical performance and factors affecting performance

COURSE OUTLINE

1. INTRODUCTION

Muscle & contraction-Architecture of skeletal muscles, sliding filament theory, types of muscle fibers, mechanical efficiency of muscle contraction, force-velocity relationship, motor unit, muscle fatigue-blood supply, prolonged exercise.

2. AEROBIC & ANAEROBIC EXERCISE

Sources of Energy, Energy Transfer and Energy Expenditure at rest and various physical activities.

Aerobic processes intensity & duration of exercise, prolonged exercise, muscular stress involved in exercise.

Anaerobic processes: Power & capacity of high energy breakdown.

Lactate: Production- distribution & disappearance, effect of metabolism on tissue & blood Ph, Anaerobic threshold, Maximal aerobic power, maximal anaerobic power.

3. PHYSICAL FITNESS TESTS

Test of Maximal aerobic power – Measurement of oxygen uptake, Treadmill tests, Bicycle ergo meter test, step-test, maximal oxygen uptake in various sports. Evaluation of anaerobic power, Exercise electrocardiogram.

4. PHYSICAL TRAINING:

Training principles, continuous versus intermittent exercise training methods & biological long –term effects of training, isometric strength training, dynamic strength training. Training of aerobic power, training of anaerobic power. Peripheral adaptation to aerobic training. Endurance training, retraining, recovery after exercise, contraindications to physical training.

5. CARDIOVASCULAR & CIRCULATORY SYSTEM

Cardiac cycle – pressure during cardiac cycle, Hemodynamics mechanical work and pressure, hydrostatic pressure, flow and resistance, various-capillary structure and transport mechanism, filtration & osmosis, vascularisation of Skeletal muscles, regulation of circulation during exercise, cardiac output & O_2 uptakes –stroke volume, blood pressure.

6. RESPIRATORY SYSTEM:

Lung compliance, air way resistance, pulmonary ventilation at rest and during exercise, diffusion in lung tissues, gas pressure – ventilation & perfusion-regulation of breathing – exercise, high air pressures- Breath holding diving.

7. APPLIED WORK PHYSIOLOGY:

Factors affecting sustained physical work, assessment of work load in relation to work capacity, Assessment of maximal aerobic power measurement of oxygen uptake in a typical work situation, Assessment of load exerted on specific muscles, Classification of work, Daily rates of energy expenditure, energy expenditure during specific activities like sleeping, sedentary, work, house work, light industry, manual labor.

8. FATIQUE:

General Physical fatigue, local muscular fatigue, shift work, effect of menstruation. Fatigue assessment and scientific organization of work-rest regimes to control fatigue.

9. NUTRITION & PHYSICAL PERFORMANCE:

Nutritional requirements, energy metabolism & factors governing the selection of fuel for muscular exercises, food for the athlete, Energy balance, regulation of food intake, ideal body weight obesity, slimming diets, optional supply of Nutrients.

10. FACTORS AFFECTING PERFORMANCE:

Considerations of age and sex in exercise and training, Environmental influence on Performance, Influence of altitude on performance, Influence of body composition, Sleep, Rest, Warm up, Massage and stretching on performance, Influence of ergogenic aids on performance.

ELECTROPHYSIOLOGY & ELECTRODIAGNOSIS

II SEMESTER

COURSE DESCRIPTION

In this course, the student will learn the principles of testing the electrical properties of muscle and the conduction in the nerve and thereby diagnose the underlying pathology and use this as a tool to follow the prognosis. It will introduce the student about physiology and electrical properties of muscles and nerves, required instrumentation for and procedure of electrophysiological and electro diagnostic testing, abnormal findings and their interpretations

Course title : Electrophysiology& Electro diagnosis Duration : 7 – 12 months Total hours : 105 hours Theory : 45 hours Practical : 60 hours Total hours/Week : 7 hours

COURSE OUTCOME:

At the end of the course the students will be able to

- Describe the anatomy and physiology of muscles and nerves and their electrical properties effectively.
- Enumerate the instrumentation and list the function of each component.
- Demonstrate the procedure to conduct a electromyography study and nerve conduction study
- List the abnormal findings of electromyography study and nerve conduction study and interpret the same with justification
- Demonstrate the procedure of Somatasensory evoked potential testing and its interpretation.
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ELECTROPHYSIOLOGY & ELECTRODIAGNOSIS

COURSE OUTLINE

1. INTRODUCTION

Anatomy and physiology of peripheral nerve, muscle and neuromuscular junction, Electrical properties of muscle and nerve, Electrical stimulation and its effects on various systems, Safety considerations in electrotherapy

2. INSTRUMENTATION

Instrumentation, Surface electrodes- Needle electrodes-Types, intracellular electrodes, amplifiers, Filters, Signal averagers, stimulator, cathode-ray oscilloscope, digital processing & Electrical safety.

3. METHOD OF EXAMINATION

EMG Examination during
- Muscle at rest,
- Insertional activity,
- Minimum effort,
- Maximum effort.

Quantitative methods in EMG

4. ABNORMAL MOTOR UNIT POTENTIALS:

EMG findings in the following conditions: Motor neuron disease, hereditary motor neuron diseases poliomyelitis, muscular dystrophies. inflammatory myotonias, metabolic myopathies.

5. MOTOR AND SENSORY CONDUCTION STUDIES

Physiology of nerve conduction, General factors affecting nerve conduction, Nerve stimulation-Latency, Amplitude, nerve conduction velocity. Special conduction techniques- H wave and F wave in Proximal conduction studies, standard motor conduction techniques of radial nerve, ulnar nerve, median nerve, femoral nerve,sciatic nerve, tibial nerve, standard sensory conduction techniques, radial nerve, ulnar nerve, median nerve, tibial nerve, sural nerve, Blink reflex.

6. CONDUCTION STUDIES IN PERIPHERAL NEUROPATHIES

Nerve conduction changes in peripheral neuropathy, Electromyographic changes in peripheral neuropathies,electrical study of Axon reflexes, Blink reflex,
Nerve Trauma and Compression Syndromes
Brachial plexus lesions, Entrapment neuropathies, Median nerve (Carpal Tunnel syndrome) Ulnar nerve (Cubital Tunnel Syndrome), radial nerve ,Tarsal Tunnel syndrome, Myasthenia gravis , Lambert – Eaton myasthenia syndrome, electro diagnosis in radiculopathy.

7. SOMATO SENSORY EVOKED POTENTIALS

General principles, Electrode placement, Polarity methodology for upper extremities studies, methodology for lower extremity studies, use of somato sensory evoked potentials in peripheral nerve problems, use of somato sensory evoked potentials in Brachial plexopathy, use of somato sensory evoked potentials for determining prognosis & Diagnosis.

PHYSIOTHERAPY DIAGNOSIS AND CLINICAL DECISION MAKING

III SEMESTER

COURSE DESCRIPTION:

In this course, the student will learn clinical examinations, assessments, diagnosis and clinical decision making of various conditions.

Course title : Physiotherapy Diagnosis And Clinical Decision Making
Duration : 13 – 18 months
Total hours : 120 hours
Theory : 30 hours
Practical : 90 hours
Total hours/Week : 8 hours

COURSE OUTCOMES:

At the end of this course, the student will be able to

- Interpret investigations and imaging techniques of various conditions effectively.
- Demonstrate the physical fitness assessment for sports effectively.
- Demonstrate the special tests and scales for various disorders effectively.
- Demonstrate clinical decision making in electrotherapeutics effectively
- Demonstrate assessment of various conditions precisely
- Demonstrate the screening of various conditions precisely.

COURSE OUTLINE:

1. INTRODUCTION TO SCREENING FOR REFERRAL IN PHYSIOTHERAPY

a. Reasons to Screen
b. Screenings and Surveillance
c. Diagnosis by the Physiotherapist
d. Differential Diagnosis Versus Screening
e. Direct Access
f. Decision-Making Process Case Examples and Case Studies.

2. INTRODUCTION TO THE INTERVIEWING PROCESS

a. Concepts in Communication

b. Cultural Competence

c. The Screening Interview

d. Subjective Examination

e. Core Interview

f. Hospital Inpatient Information

3. PHYSICAL THERAPY SCREENING

1. Clinical examination in general and detection of movement dysfunction.

2. Principles of pathological investigations and imaging techniques related to neuromuscular, skeletal and cardiopulmonary disorders with interpretation.

3. Developmental screening, motor learning –motor control assessment.

4. Anthropometric measurements.

5. Physical fitness assessment by Range of motion, Muscle strength, endurance and skills, Body consumption, Fitness test for sports.

6. Evaluation Methods, Special tests and Scales used in Musculoskeletal, Neurological and Cardiopulmonary disorders.

7. EMG and Biofeedback.

8. Biophysical measurements, physiotherapy modalities, techniques and approaches.

9. Evaluation of aging.

10. Aids and appliances, adaptive functional devices to improve movement dysfunction.

11. Exercise ECG testing and monitoring.

12. Pulmonary function tests and Spirometry.

13. Physical disability evaluation and disability diagnosis.

14. Gait analysis and diagnosis.

15. Clinical decision making in electrotherapeutics

4. OVERVIEW OF THE PHYSIOLOGY OF PAIN AND SYSTEMIC CAUSES OF PAIN

a. Mechanisms of Referred Visceral Pain
b. Multisegmental Innervations
c. Assessment of Pain and Symptoms
d. Sources of Pain
e. Types of Pain
f. Comparison of Systemic Versus Musculoskeletal Pain
g. Patterns
h. Characteristics of Viscerogenic Pain,
i. Screening for Emotional and Psychologic Overlay
j. Screening for Systemic Versus Psychogenic Symptoms

5. PHYSICAL ASSESSMENT AS A SCREENING TOOL

a. General Survey
b. Techniques of Physical Examination
c. Integumentary Screening Examination
d. Nail Bed Assessment
e. Lymph Node Palpation
f. Musculoskeletal Screening Examination
g. Neurologic Screening Examination
h. Regional Screening Examination
i. Systems Review

6. SCREENING THE HEAD, NECK, AND BACK

a. Using the Screening Model to Evaluate the Head, Neck, or Back,
b. Location of Pain and Symptoms
c. Sources of Pain and Symptoms
d. Screening for Oncologic Causes of Back Pain
e. Screening for Cardiac Causes of Neck and Back Pain
f. Screening for Peripheral Vascular Causes of Back Pain
g. Screening for Pulmonary Causes of Neck and Back Pain

h. Screening for Renal and Urologic Causes of Back Pain,
i. Screening for Gastrointestinal Causes of Back Pain
j. Screening for Liver and Biliary Causes of Back Pain
k. Screening for Gynecologic Causes of Back Pain
l. Screening for Male Reproductive Causes of Back Pain
m. Screening for Infectious Causes of Back Pain

7. SCREENING THE SACRUM, SACROILIAC, AND PELVIS

a. The Sacrum and Sacroiliac Joint
b. The Coccyx
c. The Pelvis

8. SCREENING THE LOWER QUADRANT: BUTTOCK, HIP, GROIN, THIGH, AND LEG

a. Using the Screening Model to Evaluate the Lower Quadrant
b. Trauma as a Cause of Hip, Groin, or Lower Quadrant Pain
c. Screening for Systemic Causes of Sciatica
d. Screening for Oncologic Causes of Lower Quadrant Pain
e. Screening for Urologic Causes of Buttock, Hip, Groin, or Thigh Pain
f. Screening for Male Reproductive Causes of Groin Pain
g. Screening for Infectious and Inflammatory Causes of Lower Quadrant Pain
h. Screening for Gastrointestinal Causes of Lower Quadrant Pain
i. Screening for Vascular Causes of Lower Quadrant Pain
j. Screening for Other Causes of Lower Quadrant Pain

9. SCREENING THE CHEST, BREASTS, AND RIBS

a. Using the Screening Model to Evaluate the Chest, Breasts, or Ribs
b. Screening for Oncologic Causes of Chest or Rib Pain
c. Screening for Cardiovascular Causes of Chest, Breast, or Rib Pain
d. Screening for Pleuropulmonary Causes of Chest, Breast, or Rib Pain
e. Screening for Gastrointestinal Causes of Chest, Breast, or Rib Pain
f. Screening for Breast Conditions that Cause Chest or Breast Pain
g. Screening for Other Conditions as a Cause of Chest, Breast, or Rib Pain

h. Screening for Musculoskeletal Causes of Chest, Breast, or Rib Pain
i. Screening for Neuromuscular or Neurologic Causes of Chest, Breast, or Rib Pain

10. SCREENING THE SHOULDER AND UPPER EXTREMITY

a. Using the Screening Model to Evaluate Shoulder and Upper Extremity
b. Screening for Pulmonary Causes of Shoulder Pain
c. Screening for Cardiac Causes of Shoulder Pain
d. Screening for Gastrointestinal Causes of Shoulder Pain
e. Screening for Liver and Biliary Causes of Shoulder Pain
f. Screening for Rheumatic Causes of Shoulder Pain
g. Screening for Infectious Causes of Shoulder Pain
h. Screening for Oncologic Causes of Shoulder Pain
i. Screening for Gynecologic Causes of Shoulder Pain

ADVANCED PHYSIOTHERAPEUTICS III SEMESTER

COURSE DESCRIPTION

In this course, the student will learn about principles , diagnosis and management of mechanical dysfunction using manual therapy and the concepts, grades, principles of assessment and treatment for peripheral & spinal joints using manual therapy, Pilates neurodynamics, Trigger point therapy, Muscle energy techniques and Fascial manipulation.

Course title : Advanced Physiotherapeutics
Duration : 13 – 18 months
Total hours : 120 hours
Theory : 30 hours
Practical : 90 hours
Total hours/Week : 8 hours

COURSE OUTCOME

At the end of this course, the student will be able to

- Demonstrate the principles ,diagnosis and management of mechanical dysfunction using manual therapy effectively
- Demonstrate the need, legal issues and application of evidence based practice in the field of physiotherapy correctly
- Demonstrate the steps, need, special tests, and principles of diagnosis in clinical reasoning in the written format effectively.
- Demonstrate the concepts, grades, principles of assessment and treatment for peripheral & spinal joints through manual therapy based on Maitland concepts precisely.
- Demonstrate the concepts, different methods of treatment, regional techniques for peripheral & spinal joints through manual therapy based on Mulligan concepts precisely.

- Demonstrate the principles of history taking, clinical examination, treatment protocol & treatment progression for neuromusculoskeletal dysfunction through McKenzie approach precisely.
- Demonstrate Pilates neurodynamics, Muscle energy techniques, Trigger point therapy and Fascial manipulation precisely

COURSE OUTLINE

1. **INTRODUCTION TO EXERCISE THERAPY.**

Physiological and therapeutic effects of exercise,
Indications & contra indications, exercise prescription, Types of exercises & their effects - Isometric, Isotonic, Isokinetic , passive, active, active – assisted, active resisted.
Strengthening exercises & stretching procedures for all muscle groups, Muscle Re-education.
Mobilization of joints: Definition, Joint range-Outer range, Middle range, Inner range, Causes of joint range limitation, Effect of prolonged immobilization, Indication & Contraindication, Principles and methods of mobilization
Balance training, posture correction, co-ordination,
gait training, Functional training – training for activities of daily living, Therapeutic bio feed back, Relaxation techniques
Massage – Physiological effects, principles and methods, indications and Contraindications

2. **INTRODUCTION TO MANUAL THERAPY**

Evolution of manual therapy, Types of mobilizations & manipulation, Principles of examination, Diagnosis & Management of mechanical dysfunction

3. EVIDENCE BASED PRACTICE

Need for evidence based practice, Research in the field of physiotherapy & manual therapy, Application of Evidence based practice in professional day to day practice, Sources to search for evidence, Legal issues in practice.

4. CLINICAL REASONING & DIAGNOSIS

Definition of clinical reasoning, Steps in clinical reasoning process, Need for clinical reasoning, Special tests & their sensitivity & reliability, Principles of diagnosis, Correlating clinical findings with investigations & Differential diagnosis

5. MANUAL THERAPY BASED ON MAITLAND CONCEPTS

Concept of Maitland, Grades, Movement diagram, Principles of assessment including flags, Principles of treatment, Different methods of treatment, Regional treatment techniques for peripheral & spinal joints

6. MANUAL THERAPY BASED ON MULLIGAN CONCEPT

Mulligan concept, Different methods of treatment, Regional techniques for peripheral & spinal joints, Rationale of mulligan concept

7. MCKENZIE APPROACH FOR NEURO MUSCULOSKELETAL DYSFUNCTION

a) Biomechanics and pathomechanics of cervical spine, Subgroups in non-specific spinal disorders, Quebec task force classification, Principles of history taking & Clinical examination & General treatment principles
Clinical picture, examination and treatment protocol for cervical postural syndrome, cervical dysfunction syndrome and cervical derangement syndrome including treatment progression
b) Biomechanics & pathomechanics of thoracic spine, Assessment of thoracic spine, Clinical picture, examination & dysfunction & derangement syndromes including treatment progression
c) Biomechanics & patho mechanics of lumbar spine, Principles of clinical examination, Clinical picture, examination and treatment for lumbar postural, dysfunction, & derangement syndromes including treatment progression

8. PILATES NEURO DYNAMICS

Clinical neuro biomechanics, Signs & symptoms following neural injury, Clinical reasoning, Tension testing of lower limb, trunk & upper limb, Principles of treatment in different presentations

9. MUSCLE ENERGY TECHNIQUES

Definition of MET, History of MET, Anatomy Review Muscle Spindle Physiology,List examples of postural and phasic muscles and their characteristics Integration of the Spindle in MET

- Basic exercises using muscle energy techniques using post isometric relaxation in both acute and chronic contexts
- MET for Muscles of UE / LE and Spine
- Mobility Screening / Segmental Testing

10. TRIGGER POINT THERAPY

- Anatomy/Surface Anatomy
- Neuromuscular physiology
- Pathology
- Trigger point therapy foundations and research
- Trigger point massage techniques
- Clinical application and practice

11. FASCIAL MANIPULATION

- Highlights of anatomy of the human fascial system
    i. Gross anatomy of the fascial system
    ii. Myofascial/myotendinous expansions
- Basic principles of fascia

- Fascial manipulation

SPECIALITY PAPER- I
MUSCULOSKELETAL AND SPORTS PHYSIOTHERAPY

III SEMESTER

COURSE DESCRIPTION

This course will introduce the student about the musculoskeletal system, orthopedic assessment, orthopaedic conditions, fractures and dislocations of limbs.It also briefs about the background of sports, athletic conditioning, protective equipments, Nutrition and Therapeutic modalities in sport.

Course title :Musculoskeletal and Sports Physiotherapy - I
Duration :13 – 18 months
Total hours :120 hours
Theory : 30 hours
Practical :90 hours
Total hours/Week :8 hours

COURSE OUTCOME:

At the end of the course the students will be able to

- Describe the anatomy, kinematics, applied anatomy, physiology, biomechanics and patho mechanics of musculoskeletal system.
- Demonstrate the general orthopedic physiotherapy assessment procedures with emphasis to disability and disability evaluation
- Demonstrate the physiotherapy management of orthopedic conditions, fractures and dislocations of the limbs independently
- Demonstrate athletic conditioning program effectively.
- Demonstrate therapy using therapeutic modalities for athletes precisely

COURSE OUTLINE:

I.MUSCULO SKELETAL SYSTEM

1. Embryology & anatomy of musculoskeletal system
2. Arthrokinematics and osteokinematics of musculoskeletal system
3. Growth & maturation of musculoskeletal system
4. Applied anatomy of musculoskeletal system
5. Physiology of musculoskeletal system
6. Applied biomechanics and pathomechanics of bones, joints & soft tissues

II. ORTHOPAEDIC ASSESSMENT

1. General Orthopedic Physiotherapy assessment procedures which includes demographic data collection, History, Observatory, Palpatory & examination which includes the assessment of pain, Motor examination, Joint laxity, Sensory examination, Posture and Gait evaluation and Other relevant system (e.g.) Cardio respiratory / Neurological examination methods along with disease specific / joint specific/ soft tissue specific tests assigned according to its sensitivity & specificity, disability and disability evaluation

III. FRACTURES AND DISLOCATIONS OF UPPER LIMB

Describe in detail the fracture humerus, forearm bones, colle's fracture, hand bones and their medical and physiotherapy management and their complications. Total shoulder replacement – their medical and physiotherapy management. Anterior dislocation of shoulder and reconstructive procedures – Putti platt, Bankart repair, Magnusan, Stalk Bristow and its physiotherapy management.

IV. ORTHOPAEDIC CONDITIONS OF UPPER LIMB

Rotator Cuff injuries, Bicipital tendinitis , supraspinatus tendinitis, Tennis Elbow, Trigger Finger, Periarthiritis shoulder , Thoracic – outlet Syndrome, shoulder hand syndrome, carpal tunnel syndrome – physiotherapy management. .

V. FRACTURES AND DISLOCATIONS OF LOWER LIMB

Describe in detail about the fracture neck of femur and their complication, fracture trochanter and their classifications, sub trochanteric fracture, shaft of femur,

supracondylar fracture and intercondylar fracture of femur and its surgical and physiotherapy management.

Describe in detail the patellar fracture, patellectomy, intercondylar fracture of shaft of tibia, Pott's fracture, calcaneal fracture, metatarsal fracture and its surgical and physiotherapy management.

The following operative procedures and its physiotherapy management: Total hip replacement, bipolar endoprosthesis, hemirathroplasty, Richard's compression plate technique, Jewett Nail Fixation, Total knee replacement, Anterior Cruciate Ligament reconstruction, Menisectomy.

VI. ORTHOPAEDIC CONDITIONS OF LOWER LIMB:

Congenital dislocation of hip, slipped capital femoral epiphysis, Avascular necrosis of femoral head, Coxa vara, coxa valga, Anteversion, retroversion, posterior, & anterior dislocation of hip, Perthe's disease, chondromalasia patellae, Recurrent dislocation of patella, forefoot valgus, forefoot varus, Tarsal tunnel syndrome and its surgical management.

VII. HISTORY AND BACKGROUND OF SPORTS

Origin of sports, Historical, Background, Qualities of an athlete, Relevance of sports in the modern time, Introduction to sports physiotherapy, occurrence of injury in sports.

VIII. ATHLETIC CONDITIONING PROGRAM

Skeletal muscle – Type I and Type II fibers, General conditioning principles – Strength, power, Muscular endurance, flexibility, anaerobic metabolism.

Warm-up schedule, stretching partner, stretching using the proprioceptive neuromuscular facilitation technique.
Types of exercises – Isometric exercise, Isotonic exercise, Isometric exercise, special forms of exercise – manual resistance, proprioceptive neuromuscular facilitation, surgical tubing, circuit training, sport – specific skills.

IX. NUTRITION AND ATHLETE:

Well – balanced diet, pre-event nutrition, increasing weight, decreasing weight in wrestlers, carbohydrate – loading diet, sugar before and after competition.

X. PROTECTIVE AND SUPPORTIVE EQUIPMENT:

Protective equipments, supportive devices, motion limiting devices. Taping and wrapping techniques.

XI. THERAPEUTIC MODALITIES IN SPORT:

General principles of therapeutic modalities, Hydrotherapy, shortwave Diathermy, Microwave Diathermy, Ultrasound, Iontophoresis, phonophoresis, Electrical muscle stimulation transcutaneous Electrical Nerve stimulation, cryotherapy, cold spray, Contrast bath, Paraffin wax bath. Ultraviolet& massage - indications, contraindications, therapeutic and physiologic effects, treatment techniques.

SPECIALITY – I

NEUROLOGICAL PHYSIOTHERAPY

III SEMESTER

COURSE DESCRIPTION

This course will introduce the student about the neurophysiology, neuropathophysiology, development of nervous system, neuro assessment and various neurological conditions.

Course title : Neurological Physiotherapy- I
Duration :13 – 18 months
Total hours :120 hours
Theory : 30 hours
Practical :90 hours
Total hours/Week :8 hours

COURSE OUTCOME:

At the end of the course the students will be able to

- Discuss the neurophysiology , neuropathophysiology and development of central nervous system and apply the same in assessment and management of neurological conditions
- Demonstrate physiotherapy assessment for neurological patients independently.
- Demonstrate the physical therapy management for various common neurological conditions precisely.

COURSE OUTLINE

I.NEURO PHYSIOLOGY

1. Limbic system
2. Development of locomotion
3. Neural control of locomotion
4. Alpha motor neuron and muscle spindle
5. Ballistic movement and ramp movement
6. Myelination of pyramidal tracts
7. Development of neuromuscular junction
8. Development of motor system in man
9. Motor control at the spinal cord level
10. Brainstem and motor control
11. Cortical motor systems
12. Cerebellar mechanisms
13. Basal ganglia and their connections
14. Special senses

II. NEUROPATHOPHYSIOLOGY

1. Neural control of bladder and its dysfunction
2. Long loop mechanism in human central nervous system and their disorders
3. Pereceptual disorders in locomotion
4. Disorders of basal ganglia
5. Neuropathies
6. Pathophysiology of pain
7. Pathophysiology of deep tendon reflex, clonus, plantar response and abdominal reflex
8. Pathophysiology of unconscious patient, autonomic nervous system and Neurotransmitters

III. DEVELOPMENT AND GROWTH OF CENTRAL NERVOUS SYSTEM,

Development and growth of central Nervous system, Anatomy of cerebrum, Cerebellum and spinal cord, disorders of motor system, Ageing of nervous system physiology of Cerebrospinal fluid its circulation and absorption,

IV. NEURO ASSESSMENT

Subjective assessment, Examination of Higher functions, Motor assessment, Sensory assessment, Balance and Coordination assessment, Reflex assessment, Gait assessment, Bladder and Bowel assessment, Functional evaluation, Evaluation of A.N.S dysfunction with reference to psycho-physiological testing. Perception testing

V. SPASTICITY & RIGIDITY

1. Definitions, Types & classifications and significance, assessment, physiotherapy management, use of casts and splints, newer methods in physical therapy.

VI. NEUROLOGICAL CONDITIONS

1. Describe in detail the etiology, clinical features, assessment and management of the following:

    - Cerebral palsy
    - Cerebrovascular accidents
    - Movement disorders
    - Basal ganglia disorders
    - Peripheral Neuropathy
    - Muscle diseases
    - Cerebellar dysfunctions
    - Traumatic head injury and spinal cord injury
    - Infections Of Central Nervous System
    - Intracranial Neoplasm
    - Demyelinating diseases of peripheral nervous system
    - Demyelinating diseases of central nervous system
    - Vestibular disorders
    - Cognitive and perceptual dysfunctions
    - Neuropsychiatric disorders

SPECIALITY – I

CARDIO-RESPIRATORY PHYSIOTHERAPY

III SEMESTER

COURSE DESCRIPTION

This course will introduce the student about the basics of cardio respiarotory anatomy and physiology, cardiorespiratory assessment, management of pulmonary and cardiovascular diseases, cardio pulmonary resuscitation, Electrocardiography and relaxation exercises for cardio pulmonary related patients.

Course title : Cardio respiratory Physiotherapy- I
Duration :13 – 18 months
Total hours :120 hours
Theory : 30 hours
Practical :90 hours
Total hours/Week :8 hours

COURSE OUTCOME:

At the end of the course the students will be able to

- Discuss the anatomy and physiology of cardio pulmonary system and apply the same in assessment and management of cardiopulmonary conditions
- Demonstrate physiotherapy assessment for cardiopulmonary patients and interpret investigations independently.
- Demonstrate the physical therapy management for various common cardiopulmonary conditions precisely.
- Demonstrate cardiopulmonary resuscitation and relaxation exercises independently

COURSE OUTLINE

1. INTRODUCTION

Anatomy of the Thorax, Respiratory tract, broncho-pulmonary segments, Mechanics of Breathing, lung compliance, neural control of airway resistance, Gas exchange & transport, pulmonary circulations. Vascular mechanics, matching of blood and gas, control of breathing.
Respiratory muscles: Respiratory muscle mechanics. Respiratory muscle blood flow, determinants of respiratory muscle fatigue, Respiratory muscle function in disease, effect of training program on pulmonary function.

2. CARDIO-RESPIRATORY ASSESSMENT

Inspection, Palpation, Percussion & Auscultation, chest movement, Chest expansion, Breathing pattern, Investigations: Chest X-rays, Pulmonary function tests, Electrocardiography, echocardiography, cardiac catheterization, stress testing, coronary angiography, lung scintigraphy, Acid base balance, lipid profile, exercise tolerance test, Computerized Tomography scan, Magnetic Resonance Imaging.

3. PULMONARY DISEASES:

Describe medical & physiotherapy management of the following:

Emphysema, chronic bronchitis, Bronchiectasis, Asthma, Cystic fibrosis, Exercise testing, airway clearance, O_2 therapy, pursed lip breathing exercise Bronchiectasis, lung abscess, Bronchopneumonia, Destroyed lung, carcinoma of the lung, pulmonary embolism, pneumoconiosis, Asbestosis & Interstitial lung disease, Pre-operative & Post-operative management.

Describe medical management of Empyema thoraces, Describe underwater seal intercostals drainage, Rib resection, Decortications, window operation, physiotherapy management.

4. CARDIO VASCULAR CONDITIONS

Describe the etiology, clinical features, assessment and management of the following:

- Congenital heart diseases
- Acquired heart diseases
- Myocardial infarction
- Hypertension
- Diseases of the myocardium
- Pericardial diseases
- Tumors of the heart
- Vascular diseases
- Peripheral vascular diseases

5. CARDIO-PULMONARY RESUSCITATION:

Cardiac arrest, Ventricular fibrillation, resuscitation, closed & open cardiac management, artificial respiration, emergency medications.

6. ELECTROCARDIOGRAPHY:

Bipolar standard leads, Unipolar leads, normal anatomy & physiology of the cardiovascular system , normal Electrocardiography , right & left axis deviations, ventricular hypertrophy, QRS complex abnormality , normal & abnormal P wave, bundle branch block Electrocardiography in myocardial infarction, Localization of Myocardial Infarction, Q wave abnormality, coronary insufficiency, ST segment abnormalities, T wave abnormality, stress testing Electrocardiography, classification of arrthymias, sinus tachycardia, sinus – bradycardia, ectopic atrial rhythm. Atrial fibrillation, atrial flutter, atrial bradycardia, AtrioVentrcular nodal rhythm, extra systoles, ventricular rhythms, ventricular bradycardia, ventricular fibrillation 1st degree AtrioVentrcular block, II degree AtrioVentrcular block, III degree AtrioVentrcular block, ventricular premature beats – clinical significance , prognosis.

7. RELAXATION EXERCISES

Principles of Relaxation, Methods of Relaxation, Yoga, Transcendental Meditation and other forms of Relaxation; Anxiety/panic and Respiratory function, progressive muscle relaxation; Desensitization, Music & Imagery as Relaxation therapy, Biofeedback in Relaxation

SPECIALITY – I
PAEDIATRIC PHYSIOTHERAPY

III SEMESTER

COURSE DESCRIPTION:

This course will introduce the student about the growth and development of various systems, developmental disorders, paediatric nutrition, paediatric assessment and physiotherapy management of musculoskeletal and surgical conditions of paediatric population.

Course title : Paediatric Physiotherapy- I
Duration :13 – 18 months
Total hours :120 hours
Theory : 30 hours
Practical :90 hours
Total hours/Week :8 hours

COURSE OUTCOME:

At the end of the course the students will be able to

- Discuss the growth and development of various systems and demonstrate management of developmental disorders independently.
- Demonstrate physiotherapy assessment for paediatric patients and interpret investigations independently.
- Demonstrate the physical therapy management for various musculoskeletal conditions and surgical conditions of paediatric population precisely.

COURSE OUTLINE

I. GROWTH AND DEVELOPMENT

i) Nervous system
- Overview of growth and development
- Basic and applied neuroanatomy
- Neurophysiology

ii) Musculoskeletal System
- Overview of growth and development
- Musculoskeletal tissue systems - Connective tissue, muscles, bones andalignment of skeletal system.

iii) Cardio Pulmonary system
- Overview of growth and development
- Respiratory muscle physiology in normal and diseased

II. DEVELOPMENT DISORDERS

Factors related to developmental disorders, Early/Late detection of disorders. Various disorders related to development. Hereditary and genetic disorders, prematurity, genetic counseling.

III. PAEDIATRIC NUTRITION

Elements of Nutrition, Daily allowance/requirement of nutrients, Nutritional disorders and their relevance to physiotherapy.

IV. PAEDIATRIC ASSESSMENT

Evaluation of the pediatric patient, Eliciting history and information, securing co-operation of the sick child, sharing information with parents/caregivers. Various assessment of child with developmental delay, child on life support systems, child with spasticity ataxia, in co-ordination and other neurological conditions, child with congenital limb deficiency/abnormality.

V. EARLY INTERVENTION SERVICES

Purpose , principles & elements of early intervention, interactions between infants & caregivers, meeting the intervention needs of infants, clinical assessment of infants, development meaningful intervention, planning & implementation of services.

VI. PHYSIOTHERAPY OF MUSCULOSKELETAL CONDITIONS

Musculoskeletal disorders/injuries with special reference to congenital limb disorders/deficiencies, arthropathy/polyarthropathy, Juvenile rheumatoid arthritis , muscular dystrophy, congenital muscle torticollis, arthrogryposis multiplex congenita, osteogenesis imperfecta, amputations. Primary muscle and skeletal diseases including scoliosis, systemic diseases with musculoskeletal manifestation eg. Hemophilia. Nature of impairment/deformity. Means of correction, prevention and management through physiotherapy. Aftercare of bone, joint and soft tissue injuries, Analysis of fitness & exercise prescription for special pediatric populations, components of physical performance and physiotherapy management of sports injuries in children, juvenile diabetes & obesity.

VII. PHYSIOTHERAPY IN SURGICAL CONDITIONS:-

Pre-surgical physiotherapy, assisting to attain surgical goals, Post operative complications and their physiotherapy, emphasis on pulmonary, Cardiac and limb problems including prevention of Deep vein thrombosis and pressure sores. Post operative physiotherapy after bone, joint and tendon Surgery, contracture release, amputations, cardiac and pulmonary surgery, Burns and their management.

SPECIALITY – I
OBSTETRICS AND GYNAECOLOGICAL PHYSIOTHERAPY
III SEMESTER

COURSE DESCRIPTION:

This course describes about the anatomy and physiology of reproductive system, physiology of pregnancy and physiotherapy during antenatal and labor period.

Course title : Obstetrics and gynecological physiotherapy – I

Duration :13 – 18 months
Total hours :120 hours
Theory : 30 hours
Practical :90 hours
Total hours/Week :8 hours

COURSE OUTCOME

At the end of this course, the student will be able to

- Explain the anatomy and physiology of reproductive system effectively.
- Explain the physiology of pregnancy effectively.
- Demonstrate the exercises during antenatal and labor period for women independently and precisely.

COURSE OUTLINE

I. INTRODUCTION

1. Anatomy and physiology of pelvis, pelvic floor and muscles of pelvis, perineum, abdominal muscles, breast, reproductive tract, urinary tract, anorectal region, and endocrine physiology related to reproductive medicine
2. Puberty and menarche
3. Adolescence and the musculoskeletal system
4. Diet and exercise for adolescence

II. PHYSIOLOGY OF PREGNANCY

1. Menstruation, pregnancy and fetal development, endocrine system, reproductive system, cardiovascular system , breasts, skin, gastrointestinal system, nervous system, urinary system, Musculoskeletal system.
2. Adaptation of mother following musculoskeletal changes during pregnancy.

III. ANTENATAL PERIOD

1. Pregnancy tests and investigations
2.Antenatal care, antenatal screening, antenatal education, diet and weight gain, planning and leading labor and parent craft classes, antenatal complications, high risk pregnancy, Urinary dysfunction during pregnancy and its management.
2. Musculoskeletal problems during pregnancy, its assessment & management
3. Use of physical modalities like Transcutaneous Electrical Nerve Stimulation, Interferential Therapy, Ultra sound Therapy, Electrical stimulation, Biofeedback & Short wave Diathermy.
4. Relaxation technique in prenatal education: Physiologic basis for relaxation training, various relaxation techniques, psycho analgesic methods of pain control
5. Exercise in pregnancy : Importance of prenatal exercise and benefits of exercise in pregnancy exercise class, structure, indication, contraindication and precautions, various exercises during pregnancy – flexibility, strengthening and conditioning exercise, exercise and common discomforts of pregnancy, pregnancy discomforts and its management , ergonomics.

IV. LABOR

1. Physiology of labor, signs that indicate labor, stages of labor, mechanics of labor and its assessment
2. Induction of labor- Methods, indications, contraindications and other interventions in labor.
3. Pain during labor and various coping techniques: Relaxation, positioning, breathing during various stages of labor, electrical modalities for pain reduction, massage and other techniques
4. Complications of labor and its management

SPECIALITY – I
COMMUNITY PHYSIOTHERAPY

III SEMESTER

COURSE DESCRIPTION

This course describes about the foundational concepts in community physiotherapy, role of physiotherapy in community based rehabilitation and physiotherapy interventions in community. It also describes about the screening and rehabilitation of paediatric disorders and vocational training in community.

Course title : Community physiotherapy - I
Duration :13 – 18 months
Total hours :120 hours
Theory : 30 hours
Practical :90 hours
Total hours/Week :8 hours

COURSE OUTCOME:

At the end of the course, the students will be able to

- Demonstrate foundational concepts of community based rehabilitation and physiotherapy in community effectively
- Demonstrate various interventions of physiotherapy in community based rehabilitation precisely.
- Demonstrate screening and rehabilitation of paediatric disorders in community effectively
- Demonstrate vocational training in rehabilitation effectively.

COURSE OUTLINE

I. FOUNDATIONAL CONCEPTS IN COMMUNITY PHYSIOTHERAPY

1. Historical development of community health and community Physiotherapy- World and India, various health and family welfare committees
2. Principles of community based rehabilitation
3. Population studies and epidemiological implications of impairment, disability and handicap
4. Basic concepts of community based rehabilitation
5. Physiotherapist as a master trainer in Community based Rehabilitation
6. Bioethics ethico-moral codes of conduct physiotherapy ethics
7. Evidence based practice in community health.
8. Clinical decision-making skill in assessment & management of dysfunction related to community health.
9. Scope of Physiotherapy in community
10. Multicultural psychology and its influence on psychosocial rehabilitation
11. Role of non government organization
12. Principles of health education, methods of communication and role of health education in rehabilitation service-Audio Visual aids, planning a health education Programme.
13. Role of community leaders and health professionals in health education.
14. Role of international health agencies in rehabilitation of the disabled.

II. ROLE OF PHYSIOTHERAPY IN CBR

Screening for disabilities, Prescribing exercise programme, Prescribing and devising low cost locally available assistive aids, Modifications of physical and architectural barriers for disabled, Disability prevention, Strategies to improve ADL, Rehabilitation programmes for various neuromusculoskeletal and cardiothoracic disabilities

III. PHYSIOTHERAPY INTERVENTIONS IN COMMUNITY

1. Physical fitness
2. Principles of fitness training for health promotion in community 3. Stress management through yoga and psychosomatic approaches.
4. Home exercise programs for various classifications of disabilities.
5. Physiotherapy in maternal and child health care.
6. Exercise prescription for the elderly
7. Psychosocial and safety issues in elderly
8. Geriatric rehabilitation
9. Holistic physiotherapy for the aged.
10. Community mental health
11. Disability detection and early intervention

IV. SCREENING AND REHABILITATION OF PEDIATRIC DISORDERS IN THE COMMUNITY:

Early detection of high risk babies, Maternal nutrition and education, Rehabilitation of Cerebral Palsy, Polio, Down Syndrome, Muscular Dystrophies etc., Prevention and rehabilitation of mental retardation and Behavioral disorders, Immunization programmes, Early intervention in high risk babies, Genetic counseling

V. VOCATIONAL TRAINING IN REHABILITATION:

Introduction, Need, Vocational evaluation, Vocational rehabilitation services

SPECIALITY – II
MUSCULOSKELETAL AND SPORTS PHYSIOTHERAPY

IVSEMESTER

COURSE DESCRIPTION

This course will introduce the student about the orthopedic conditions, fractures and dislocations of spine , orthopedic surgeries, manual therapy techniques, hand and sports rehabilitation, community based rehabilitation, pediatric and geriatric rehabilitation, diagnostic measures, disability evaluation and Recent Advancement in musculoskeletal and sports physiotherapy.

Course title :Musculoskeletal and Sports Physiotherapy- II Duration :19 – 24 months Total hours :210 hours Theory : 90 hours Practical :120 hours Total hours/Week :14 hours

COURSE OUTCOME:

At the end of the course the students will be able to

- Demonstrate the physiotherapy management of orthopedic conditions, fractures and dislocations of the spine independently
- Demonstrate the pre-operative and post-operative management of various orthopedic surgeries independently.
- Demonstrate the Manual therapy techniques and soft tissue mobilization techniques precisely.
- Demonstrate rehabilitation of hand precisely
- Demonstrate sports injury management and sports physiotherapy precisely
- Demonstrate community level, geriatric and pediatric rehabilitation along with the recent advancement in the musculoskeletal and sports physiotherapy.

COURSE OUTLINE:

I. FRACTURES AND DISLOCATIONS OF SPINE

Clinical features following fracture of vertebrae and its Steffi plate fixation, Harrington's rod instrumentation, and conservative management. Describe the physiotherapy management following fracture spine.

II. ORTHOPAEDIC CONDITIONS OF SPINE:

Spondylolysthesis – Pathology, surgical and physiotherapy management.
Intervertebral disc prolapse – Pathology, Traction, Surgery, physiotherapy management, back care,
Lumbar spondylosis – Pathology, X - ray findings, physiotherapy management,
Adolescent kyphosis,
Pott's Paraplegia – Taylor's brace, Steffi plating, decompression.
Scoliosis- type, measurement, braces, operative correction and its physiotherapy management.

III. ARTHRITIS:

Affections of cervical spine and its physiotherapy management, Osteoarthritis – Articular neurology, Anatomy of articular cartilage, Tibial Osteotomy, Total knee replacement and its physiotherapy management. Rheumatoid arthritis: Its clinical features and its physiotherapy management.

IV. ORTHOPEDIC SURGERIES

1. Principles of Orthopedic surgery & their PT management
•Arthrodesis
•Osteotomy
• Arthroplasty
• Bone grafting
• Internal and external fixations
• Distraction and limb reconstruction
• Correction of bone deformities and joint contractures.
• Tendon transfers
• Nerve suturing and grafting.
•Wound debridement
• Orthopaedic implants

V. ORTHOPEDIC CONDITIONS

1. Physiotherapy management of the following orthopaedic conditions
   - Amputations
   - Burns
   - Metabolic, Hormonal, Neoplastic and Infective condition of bone and joints

VI. ORTHOPEDIC MANUAL THERAPY

1. History of manual therapy. Overview of various manual therapy approaches for all the skeletal joints.
2. Principles and application of different soft tissue mobilizations like Myofacial Release Techniques, Neural Tissue Mobilization, Muscle Energy Technique,Trigger Point Release, Positional Release Technique, CyriaxTechnique.
3. Pilates-school of thought, Chiropractic school of thought, Osteopathic school of thought
4. Principles and applications of joint mobilization and manipulation like Maitland, Mckenzie, Mulligan technique and Kaltenborn.
5. Therapeutic exercise as an adjunct to manual therapy.
6. Neuromuscular Taping techniques
7. Advances in the field of manual medicine

VII. HAND REHABILITATION

1. Anatomy of Hand
2. Assessment of Hand
3. Bio Mechanics & Patho Mechanics of Hand
4 Peripheral Nerve Injuries
5. Tendon Injuries and Tendon Transfers
6. Hand Conditions
7. Splints
8. Occupational hand disorders.

VIII. ON-FIELD MANAGEMENT OF ATHLETIC INJURY:-

Identifying on field injury, Assessment of injury and risks, major injuries and life threatening, trauma/illness, internal injury, spinal injury, fractures; Other bone, joint, muscle injury, shock, first aid in sports, immediate management, Definitive

management, referral, return, to sport. On-field medical team, rapport with other professionals.

IX. SPORTS INJURY MANAGEMENT

Analysis and classification of sports and sports specific injuries and its medical and physiotherapy management.
Epiphyseal Injuries, Shoulder Girdle Injuries, Elbow Joint Injuries, Wrist and Hand Injuries, Thigh Injuries, Knee Injuries, Injuries of the Patella, Injuries to the Lower Leg, Ankle and Foot Injuries, Injuries to the Ankle, Injuries to the Running Athlete, Swimming Injuries, Sports Physiotherapy for the Disabled

IX SPECIAL TOPICS

1. Community Based Rehabilitation in Musculoskeletal Disorders.
2. Rehabilitation of Paediatric Musculoskeletal Disorders
2. Geriatric Physiotherapy
3. Splinting,Orthosis,Prosthesis
3. Electromyography and biofeedback
4. Ergonomics in musculoskeletal dysfunctions with special emphasis to industrial safety.
5. Understanding of disability & its compensation strategies
6. Emergency care & musculoskeletal therapeutics
7. Role of Physiotherapist as a member in disaster management team.
8. Recent advances in pain evaluation & physiotherapy management.
9. Team Approach of Physiotherapy management in poly trauma
10. Home program & counseling of care givers
11. Recent Advancement in musculoskeletal and sports physiotherapy
12. Medico legal issues in sport

SPECIALITY – II

NEUROLOGICAL PHYSIOTHERAPY

IV SEMESTER

COURSE DESCRIPTION

This course will introduce the student about role of a physiotherapist in metabolic disorders of brain, degenerative diseases of nervous system, disorders of spinal cord, neuromuscular junction and muscle. It will also deal with paediatric neurology, orthotics, neurotherapeutic techniques and community related physiotherapy for neurologically impaired.

Course title : Neurological Physiotherapy-II
Duration :19 – 24 months
Total hours :210 hours
Theory : 90 hours
Practical :120 hours
Total hours/Week :14 hours

COURSE OUTCOME:

At the end of the course the students will be able to

- Demonstrate physiotherapy assessment and management for neurological patients with metabolic disorders and degenerative diseases independently.
- Demonstrate physiotherapy assessment and management for disorders of spinal cord, neuromuscular junction and muscle independently.
- Demonstrate the physical therapy assessment and management for paediatric neurological conditions precisely.
- Demonstrate neurotherapeutic techniques precisely
- Demonstrate community related neurological physiotherapy for neurologically impaired

COURSE OUTLINE

I. METABOLIC DISORDERS OF BRAIN:

Hypoxic encephalopathy, hypoglycemic encephalopathy, Hepatic encephalopathy - clinical features, pathophysiology, medical and physiotherapy management.

II. DEGENERATIVE DISEASES OF NERVOUS SYSTEM:

Clinical manifestations, pathophysiology, medical management surgical treatment, physiotherapy management of Parkinson's Disease, Motor neuron disease Amyotrophic lateral sclerosis, Progressive bulbar palsy, progressive muscular atrophy and Multiple sclerosis

III. PAEDIATRIC NEUROLOGY

Cerebral palsy: Causes, classification, types, reflex, activity at different levels, Assessment of developmental milestones from birth, Deformities.
Management: Lifting, carrying, positioning, orthopaedic surgeries, Equipments used. Treatment Techniques**:** Neuro developmental approach (Bobath), Roods approach, Vojta techniques, Home programme.

Spinabifida: Incidence, Assessment of neonate with Spina bifida, type of lesion, deformity, bladder management.

IV. DISORDERS OF SPINAL CORD:

Compression of the spinal cord: Neoplasm of the vertebral column, Intervertebral disc prolapse, extradural or epidural abscess – signs & symptoms, investigations, surgical treatment, physiotherapy management & rehabilitation.
Syringomyelia ; etiology, Pathology, clinical manifestation, surgical treatment-decompression laminectomy, venticulo-atrial shunt, physiotherapy management, spasticity management, orthoses, Pressure – sore management, patient education:

V. DISORDERS OF NEURO MUSCULAR JUNCTION:

Myasthenia gravis: Etiology, Classification, signs & symptom prognosis, Electomyographic picture - medical & surgical treatment, physiotherapy management.
Eaton-Lambert syndrome

VI. DISORDERS OF MUSCLE:

Myotonia congenita, Dystrophia myotonia, Paramyotonia congenita – Clinical features, pathology, medical management & physiotherapy management.
Classification, Etiology, Clinical Presentation, Pathology enzymes level, muscle biopsy, Electromyographic picture, orthotic management physiotherapy management of
Progressive muscular dystrophy
Duchenne Muscular Dystrophy
Becker's Muscular Dystrophy
Limb-girdle muscular dystrophy
Facio - Scapulo humeral-muscular Dystrophy

VII. ORTHOTICS IN NEUROLOGICAL CONDITIONS

1. Different types of splints for the upper limb, uses of static and dynamic splints, Application and training with splints, lower extremity orthotics-uses and applications, training with orthoses in Lower motor neuron and Upper motor neuron conditions.

VIII. NEUROTHERAPEUTIC TECHNIQUES

1. Therapeutic approaches based on motor learning
2. Inhibition in central nervous system
3. Common facilitatory and inhibitory treatment techniques
4. Theories of learning
5. Sensory system in motor performance
6. Feed back mechanism and its application in treatment
7. Treatment approaches in neurological rehabilitation: Bobath, Neuro Developmental Therapy, Sensory Integration, Brunnstrom, Roods, Proprioceptive Neuro muscular Facilitation, Vojta therapy, Motor

Relearning Programme, Myo facial release
8. Vestibular rehabilitation
9. Myofacial release technique
10. Swiss ball therapy
11. Alternative and complementary therapies

IX. COMPLICATIONS ASSOCIATED WITH NEUROLOGICAL DISEASES

1. Bedridden patients - problems, methods to manage them, Identification and management of respiratory complications in neurological conditions, Hand and foot problems in Diabetes & leprosy. Physiotherapy of the neurologically impaired hand, contractures and deformities.

X. COMMUNITY RELATED PHYSIOTHERAPY

1. Needs of neurologically impaired persons in a community, planning home programs, community related physiotherapy, working with active groups in community, multidisciplinary approach, Rapport with other professionals.

SPECIALITY – II
CARDIORESPIRATORY PHYSIOTHERAPY
IV SEMESTER

COURSE DESCRIPTION:

This course will introduce the student about Intensive care unit, Management of acute respiratory failure, neonates with respiratory diseases, Children with respiratory dysfunction, trauma to chest and physiotherapy following thoracic surgeries. It also describes the special techniques used in Cardio pulmonary Physiotherapy

Course title : Cardio respiratory Physiotherapy - II
Duration : 19-24 months
Total hours : 210 hours
Theory : 90 hours
Practical : 120 hours
Total hours/Week : 14 hours

COURSE OUTCOME

At the end of this course, the student will be able to

- Demonstrate Physiotherapy care in Intensive care unit and manage acute respiratory care precisely.
- Demonstrate Physiotherapy assessment and management of neonates and children with respiratory dysfunction.
- Demonstrate Physiotherapy following trauma to chest and following thoracic surgeries independently.
- Demonstrate special techniques in cardiopulmonary physiotherapy precisely.

COURSE OUTLINE

I. INTENSIVE CARE UNIT

Intensive care unit - concept and set-up, equipment for advanced methods of resuscitation, monitoring and patient management: artificial airways, ventilators , pulse-oximetry. Force expiratory techniques, spirometry, inspiratory holds, Autogenic drainage. Humidifiers, Nebulizers, Oxygen therapy, Role of a physiotherapist in Intensive care unit, cardiovascular and respiratory factors limiting physical exercises, Breathing exercises and respiratory dynamics, cardio-respiratory monitoring in physiotherapy stress testing and its relevance to exercise prescription.

II. ACUTE RESPIRATORY FAILURE

Respiratory failure and its types, Respiratory abnormalities and its management, Endotracheal Intubation, Tracheostomy, Mechanical ventilation, oxygen toxicity, Bronchial hygiene, Breathing exercises, oxygen therapy.

III. NEONATES WITH RESPIRATORY DISEASES:

Anatomical & Physiological differences in neonates, pulmonary problems, secondary to immaturity, Neonatal distress, asphyxia management, Broncho pulmonary dysplasia, Nikity Wilson syndrome, Bronchial stenosis, chest physical therapy, positioning, manual percussion & vibration, Airway suctioning, Bronchial Drainage at home, suctioning at home.

IV. CHILDREN WITH RESPIRATORY DYSFUNCTION:

Developing lung, developmental delay, Chronic obstructive pulmonary disease, Asthma, Cystic fibrosis, immunological deficiencies, Bone marrow transplantation, Pediatric Acquired Immuno Deficiency Syndrome, pertussis, functional & developmental assessment, Bronchial drainage, Percussion, vibration and shaking, coughing techniques, Forced expiratory techniques, Autogenic Drainage techniques, expiratory pressure therapy, postural exercise, Home care, mechanical percussion & vibrator, Role of physiotherapy in pediatric out patient clinic, exercise testing, exercise prescription.

V. SPECIAL TECHNIQUES

- Body positioning techniques
- Relaxation techniques
- Breathing exercises
- Breathing re-education techniques
- Advanced airway clearance techniques
- Facilitating ventilatory patterns and breathing strategies
- Evidence based practice in Cardiac Rehabilitation
- Evidence based practice in Pulmonary Rehabilitation
- Ventilator – dependent patient
- Adjuncts to Chest Physiotherapy
    - Humidification
    - Nebulization
    - Aerosol delivery
    - Mechanical ventilation (Invasive, Non Invasive)
    - Airways
    - Tracheostomy care
    - Suction
    - Manual hyper inflation
    - Lung expansion therapies
- Mobilization

VI. TRAUMA TO THE CHEST:

Pneumothorax, haemothorax, fracture ribs, lung contusion, injury to great vessels and its clinical presentation, management & physiotherapy management

VII. PHYSIOTHERAPY FOLLOWING THORACIC SURGERIES

Describe physiotherapy management of lung segmental resection, lobectomy, pneumonectomy, open lung biopsy, bilobectomy & Tracheostomy.

SPECIALITY – II
PAEDIATRIC PHYSIOTHERAPY

IV SEMESTER

COURSE DESCRIPTION:

This course will introduce the student about the physiotherapy management of cardio pulmonary conditions, neuro vascular conditions and oncology conditions of paediatric population. It also describes about the aids, appliances, therapeutic recreation and ethics in paediatric physiotherapy practice.

Course title : Paediatric Physiotherapy - II
Duration : 19-24 months
Total hours : 210 hours
Theory : 90 hours
Practical : 120 hours
Total hours/Week : 14 hours

COURSE OUTCOME:

At the end of the course the students will be able to

- Demonstrate physiotherapy assessment and management for cardio pulmonary conditions, neuro vascular conditions and oncology conditions of paediatric population independently.
- Demonstrate latest modalities and techniques in Paediatric physiotherapy precisely.
- Demonstrate ethics in paediatric physiotherapy practice

COURSE OUTLINE

I. PHYSIOTHERAPY IN CARDIO PULMONARY CONDITIONS:-

Cardiac diseases of children including congenital heart diseases, their impact on the child's health. Role of exercises in these conditions. Pulmonary conditions like Bronchitis Asthma, Lung abscess, Bronchiectasis , cystic fibrosis , respiratory distress syndrome and broncho pulmonary dysplasia - their physiotherapy management including management after cardiac and lung surgery. Role of physical therapist in neonatal & pediatric intensive care units, cardiopulmonary resuscitation in children.

II. PHYSIOTHERAPY OF NEUROVASCULAR CONDITIONS

Neurological and vascular conditions with emphasis on spina bifida, cerebral palsy, poliomyelitis anterior horn cell diseases, sequelae of encephalopathy, meningitis & cerebro-vascular diseases, paralytic disorders including peripheral nervous system diseases. Traumatic Brain injury sequelae,
Spinal cord injury, Guillian barre syndrome, spinal muscular atrophy, disorders in co-ordination and movement. Identifying goals, planning, goal-oriented physiotherapy, monitoring evaluation.

III. MODALITIES AND TECHNIQUES

Choosing the modality, precautions, contraindications, and care of equipment in the paediatric setting. Correct use of techniques of exercise; techniques and movement patterns; emphasis on various Bio-feedback, Retraining, neuro developmental and Proprioceptive neuromuscular facilitation approaches, principles of motor control, motor learning, handing techniques, facilitation techniques, inhibition techniques, sensory integration, rood approach, vojta therapy, sensory motor approach, constraint – induced movement therapy, myofascial release, mobilization & manipulation , muscle energy techniques, advanced airway clearance technique monitoring and evaluation of patients on therapy.

IV. PEDIATRIC ONCOLOGY

Physiotherapy intervention for different types of cancers, bone marrow transplantations & terminal disease

V. AIDS, APPLIANCES, SUPPORT SYSTEMS

Use of orthosis /prothesis in childhood and training, Special care needed for orthotic and prosthetic use, Enhancing function/participation of a child using support systems, Crutches, Wheelchairs and mobility aids in childhood, Adaptive equipment for physically challenged children.

VI. THERAPEUTIC RECREATION

Definitions, need for recreation in children, Recreation Activities as therapy/exercise, sports and fitness in pediatrics. Recent advances, Emerging issues; Schooling and physiotherapy, issues related to Acquired immuno deficiency syndrome and Tuberculosis in children.

VII. PEDIATRIC PHYSICAL THERAPY PRACTICE

Ethical & legal framework of pediatric physical therapy practice, models of team interaction & service delivery in pediatric physical therapy practice.

SPECIALITY – II
OBSTETRICS AND GYNAECOLOGICAL PHYSIOTHERAPY
IV SEMESTER

COURSE DESCRIPTION:

This course describes about puerperium, physiotherapy in post natal period and physiotherapy management of gynecological conditions

Course title : Obstetrics and gynecological physiotherapy - II
Duration : 19-24 months
Total hours : 210 hours
Theory : 90 hours
Practical : 120 hours
Total hours/Week : 14 hours

COURSE OUTCOME

At the end of this course, the student will be able to

- Explain the anatomy and physiology of reproductive system effectively.
- Explain the physiology of pregnancy effectively.
- Demonstrate the exercises during antenatal, post natal and labour period for women independently and precisely.
- Demonstrate assessment of various gynecological conditions of women precisely.
- Plan and demonstrate the Physiotherapy management of gynecological conditions of women effectively.

COURSE OUTLINE

I. PUERPERIUM

1. Anatomical and physiological changes, care and management of complications.

II. POST NATAL PERIOD

1. Post natal physical and mental conditions, post natal assessment and care, post natal exercises, ergonomics, immediate post natal complications and its management, late post natal complication and its management, psychological and emotional changes and coping with the demand of newborn,contraceptive methods.

III. CLIMACTERIC PERIOD

1. Physiological and endocrine changes of the menopause, menopausal systemic changes and their management, physical, psychological and emotional symptoms, post menopausal problems and its management urinary dysfunction.

IV. GYNECOLOGICAL CONDITIONS

1. Etiology, clinical features, assessment, medical and physiotherapy management of: Infective conditions, cysts and new growths, displacements ,genital prolapse, disorders associated with menstruation, back ache and abdominal pain, polycystic ovarian syndrome, infertility, premature ovarian failure/ premature menopause, lymph edema, breast cancer, psychosexual problems,endometriosis,dysmenorrhea, Fitness testing and exercise prescription in gynecological conditions (infertility, PCOD, Obesity), Electrotherapeutic modalities in Gynaecological conditions..

V. GYNECOLOGICAL SURGERY

1. Physiotherapy care of patients undergoing gynecological surgeries including preoperative physiotherapy assessment and treatment, post operative physiotherapy assessment and treatment, post operative complication and its management, discharge advice for
- Gynecological excision surgery including mastectomy
- Gynecological repair surgery
- Surgical treatment of stress incontinence,

VI. URINARY FUNCTION AND DYSFUNCTION

Normal urinary tract function, lower urinary tract dysfunction, incontinence of urine – common types, voiding difficulties, Physiotherapy assessment methods, Urodynamics, radiological and electromyographical assessment and Physiotherapy management

VII. BOWEL AND ANORECTAL FUNCTION AND DYSFUNCTION

Normal bowel function, bowel and anorectal dysfunction, physiotherapy assessment and management of foecal incontinence and bowel.

SPECIALITY – II
COMMUNITY PHYSIOTHERAPY

IV SEMESTER

COURSE DESCRIPTION

This course serves to integrate the knowledge gained by the students in community medicine and other areas with skills to apply these in clinical situations of health and disease and its prevention. It describes rehabilitation methods to prevent disabilities and dysfunctions due to various disease conditions and plan and set treatment goals and apply the skills gained in rehabilitating and restoring functions.

Course title : Community physiotherapy
Duration : 19-24 months
Total hours : 210 hours
Theory : 90 hours
Practical : 120 hours
Total hours/Week : 14 hours

COURSE OUTCOME:

At the end of the course, the students will be able to

- Demonstrate role of physiotherapy in occupational and industrial health
- Demonstrate the role of physiotherapy in National health care delivery system in community precisely
- Demonstrate the role of Physiotherapy in disaster management and ethical laws pertaining to work and practice effectively
- Demonstrate geriatric physiotherapy, fitness training, maternal and child care physiotherapy precisely and prescribe corrective exercises and home programs effectively.
- Demonstrate geriatric physiotherapy and role of physiotherapist in geriatric rehabilitation effectively

COURSE OUTLINE

I. PHYSIOTHERAPY IN OCCUPATIONAL AND INDUSTRIAL HEALTH

1. Industrial hygiene
2. Vulnerable workers group and labor law
3. Industrial Physiotherapy
4. Injury prevention and returning the worker to productivity
5. Ergonomics: principles, issues related to hand tools, posture and material handling and lifting
6. Prevention of work related injuries and redesigning workspace, designing auditory and visual displays for workers; occupational stress; environmental pollution – noise,vibration etc
7. Assistive technology used for stability & mobility to enhance function 8. Appropriate technology, skill transfer, sustainability, disability evaluation, concessions available to persons with disability.
8. Application of & environmental modification techniques to improve quality of life, information, education and communication

II. ROLE OF PHYSIOTHERAPIST IN NATIONAL HEALTH CARE

1. Health care delivery program in urban and rural areas
2. Disability survey
3. Epidemiological aspects
4. Demands of Physiotherapy
5. Concept of rural camps
6. Institute based rehabilitation services and multi-disciplinary approach.
7. Methodology of Community based Rehabilitation with reference to national health delivery system.
8. Role of national institutes, district rehabilitation centre and primary health centre (with appropriate exposure).
9. Public awareness to the various disabilities.
10. Communications.
11. Message generation and dissipation.
12. Persons with disability; Act – 1995 and related Government infrastructure.
13. Role of Government and non government agencies in Community based Rehabilitation

III. SPECIAL CONSIDERATIONS IN COMMUNITY

1. Advances in disaster management.
2. Role of Physiotherapist as a member in disaster management team.
3. Health care in the community – Principles & delivery systems
4. Principles and strategies of communication skills, management, information and evaluation system, records and reports, information technology, tele-medicine and tele-physiotherapy, journalism and mass media
5. Regulatory agencies & legal issues
6. Legal issues: Legislation, labor unions, International Labor Organization and World Health Organization recommendations, Factories Act, Employees State Insurance act
7. Recent advances in community physiotherapy
8. Research in community physiotherapy

ABILITY ENHANCEMENT COURSES / SKILL ENHANCEMENT COURSES / GENERIC ELECTIVE & DISCIPLINE SPECIFIC ELECTIVE COURSES

ADMINISTRATION I SEMESTER

COURSE DESCRIPTION

This course describes about the administration skills required for a Physiotherapist to manage a hospital and a physiotherapy department.

Subject Title	: Administration
Total hours	: 30
Hours / Week	: 2 Hours

COURSE OUTCOME:

At the end of this course, the student will be able to

- Describe the administrative structure effectively
- Demonstrate the Planning and administration of a Hospital and Physiotherapy department efficiently
- Demonstrate personnel management, record maintenance, budget plan and performance analysis effectively

COURSE OUTLINE

1. Introduction: Branches of administration, Nature and scope of administration, Qualities of an effective administrator, Planning hospital administration as part of a balanced health care program.
2. Principles of hospital administration and its applications to physiotherapy.
3. Planning and organization: Planning cycle, Principles of organizational charts, Resource and quality management, Planning change -innovation
4. Financial issues including budget and income generation
5. Hospital administration: Organization, Staffing, Information, Communication, Coordination, Cost of services, Monitoring and evaluation.
6. National health policy and health care system in India
7. Organization of physiotherapy department: Planning, Space, Manpower, Other basic resources.
8. Organizing meetings, committees, and negotiations
9. Personnel management: Personnel performance appraisal system, Quality care delivery from the staff
10. Material management & Methods of maintaining records
11. Quality assurance and its importance, Quality assurance through record review and medical audit.
12. Public relations in hospital and human resource management

INTELLECTUAL PROPERTY RIGHTS I SEMESTER

COURSE DESCRIPTION

This course describes about the concept and theories of Intellectual property rights and the contemporary issues in Intellectual property rights.

Subject Title	: Intellectual Property Rights
Total hours	: 30
Hours / Week	: 2 Hours

COURSE OUTCOME:

At the end of this course, the student will be able to

- Describe the concept, nature and characteristics of Intellectual property rights effectively
- Describe the theories of Intellectual property rights effectively
- Discuss the contemporary issues in Intellectual property rights effectively

COURSE OUTLINE

UNIT – I: Introduction to Intellectual Property

a. Concept & Meaning of Intellectual Property b. Nature and Characteristics of Intellectual Property c. Origin and Development of Intellectual Property d. Kinds of Intellectual Property

UNIT –II: Theories of Intellectual Property

a. Justification and Rationale for Protecting Intellectual Property b. Balancing the Protection of IPR and Public Policy Objective c. Theories of IPR:- i. Natural Theory ii. Hegelian Philosophy (Personality Theory) iii. Lockes' Theory of Property (Labour Theory) iv. Social Contract Theory v. Social Planning Theory vi. Incentive Theory vii. Reward Theory viii. Prospect Theory ix. Schumpeterian Theory x. Economic Theory

UNIT – III: International Institutions and Basic International Conventions

a. Paris Convention for the Protection of Industrial property, 1883 b. The Berne Convention, 1886 c. TRIPS Agreement, 1994 d. International Institutions Concerned with Intellectual Property

UNIT – IV: Contemporary Issues in IPR

a. Interface between IPR and Human Rights b. Interface between IPR and Competition Law c. IPR and sustainable development d. The Impact of Internet on IPR e. IPR Issues in Biotechnology f. E-Commerce and IPR issues

SUCTIONING SKILLS I SEMESTER

COURSE DESCRIPTION:

This course is intended to advance their knowledge and skills related to suctioning and clinical decision making in the adult population.

Subject Title	: Suctioning Skills
Total hours	: 45
Hours / Week	: 3 Hours

COURSE OUTCOMES:

At the end of this course, the student will be able to

- Demonstrate foundational suctioning skills
- Assess/monitor a patient's cardiorespiratory status to determine if suctioning is the indicated based on the cardiorespiratory physiotherapy treatment hierarchy
- Perform the different types of suctioning including oral, endotracheal, tracheal and nasopharyngeal suctioning in accordance with current clinical practice guidelines
- Practice the skills of suctioning in a variety of clinical scenarios in adult patient.
- Provide a patent airway by keeping it clear of excessive secretions

COURSE OUTLINE:

1. Anatomy and physiology of the upper airway
2. Pathophysiology and impact of secretion retention
3. Screening of Indication &contraindication of suctioning
4. Precautions and safety protocols required prior to suctioning
5. Examination of cardiorespiratory conditions relevant to suctioning
6. Procedure and steps for performing suctioning
7. Application of suctioning procedure
8. Adverse effects of suctioning & Areas to monitor post-treatment
9. Disposal and cleaning of used equipment
10. Documentation and reporting
11. Dealing with faulty equipment

ENTREPRENEURSHIP EDUCATION II SEMESTER

COURSE DESCRIPTION: This course introduces students to the theory of entrepreneurship and its practical implementation. This course designed to provide to ensure equity of opportunity and participation for every student on entrepreneurship. This course will have the mixture of theoretical exploration as well as case studies of real-world examples and guest lectures, students will develop an understanding of successes, opportunities and risks of entrepreneurship.

Subject Title	: Entrepreneurship Education
Total hours	: 30
Hours / Week	: 2 Hours

COURSE OUTCOMES:

At the end of this course, the student will be able to

1. Describe the range, scope, and complexity of issues involved in starting a business in health care.
2. Discuss the concept and process of entrepreneurship - its contribution in and role in the growth and development of individual and the nation
3. Demonstrate entrepreneurial quality, competency and motivation

COURSE OUTLINE :

Unit I: Introduction to Entrepreneurship
Definition of Entrepreneur, Entrepreneurial Traits and Entrepreneur vs. Manager, The Entrepreneurial decision process. Role of Entrepreneurship in Economic Development, Ethics and Social responsibility of Entrepreneurs. Opportunities for Entrepreneurs in India and abroad. Woman as Entrepreneur

UNIT – II Creating and Starting the Venture
Sources of new Ideas, Methods of generating ideas, creating problem solving, product planning and development process

UNIT – III The Business Plan
Nature and scope of Business plan, Writing Business Plan, Evaluating Business plans, Using and implementing business plans. Marketing plan, financial plan and the organizational plan, Launching formalities.

UNIT – IV Financing and Managing the new venture.

Sources of capital, Record keeping, recruitment, motivating and leading teams, financial controls. Marketing and sales controls. E-commerce and Entrepreneurship, Internet advertising.

UNIT – V New venture Expansion Strategies and Issues.

Features and evaluation of joint ventures, acquisitions, merges, franchising. Public issues, rights issues, bonus issues and stock splits.

UNIT-VI Institutional support to Entrepreneurship

Role of Directorate of Industries, District Industries, Centers (DICs),Industrial Development Corporation (IDC), State Financial corporation(SFCs), Commercial banks Small Scale Industries Development Corporations
(SSIDCs), Khadi and village Industries Commission (KVIC), National Small Industries Corporation (NSIC), Small Industries Development Bank of India(SIDBI)

SOCIAL RESPONSIBILITY & COMMUNITY ENGAGEMENT

II SEMESTER

COURSE DESCRIPTION:

This course will enable students to learn about rural challenges and develop understanding of rural wisdom and life-style in a respectful manner.

Subject Title	: Social responsibility & Community engagement
Total hours	: 30
Hours / Week	: 2 Hours

COURSE OUTCOMES:

After completing this course, student will be able to

• Gain an understanding of rural life, culture and social realities
• Develop a sense of empathy and bonds of mutuality with local community
• Appreciate significant contributions of local communities to Indian society and economy
• Learn to value the local knowledge and wisdom of the community
• Identify opportunities for contributing to community's socio-economic improvements

COURSE OUTLINE:

1. Appreciation of Rural Society

Rural life style, rural society, caste and gender relations, rural values with respect to community, nature and resources, elaboration of "soul of India lies in villages' (Gandhi), rural infrastructure

2. Understanding rural economy & livelihood

Agriculture, farming, landownership, water management, animal husbandry, non-farm livelihoods and artisans, rural entrepreneurs, rural markets

3. Rural Institutions

Traditional rural organizations,Self-help Groups, Panchayati raj institutions (Gram Sabha, Gram Panchayat, Standing Committees), local civil society, local administration

4. Rural Development Programmes

History of rural development in India, current national programmes: Sarva Shiksha Abhiyan, Beti Bachao, Beti Padhao, Ayushman Bharat, Swatchh Bharat, PM AwaasYojana, Skill India, Gram Panchayat Decentralised Planning, NRLM, MNREGA, etc

DIAGNOSTIC IMAGING II SEMESTER

COURSE DESCRIPTION:

This course has been designed to provide the basic information about common diagnostic imaging techniques.

	: **DIAGNOSTIC IMAGING**
Subject Title	
Theory / Lecture	: 2 Hours / Week
Method of Assessment	: Written

COURSE OUTCOME

At the end of the course students will be able to

- Describe about X-Ray, CT, MRI, Ultrasound and Other Medical Images
- Interpret basic findings through these images

COURSE OUTLINE

1. **IMAGE INTERPRETATION**
    a. History
    b. A New Kind of Ray
    c. How a Medical Image Helps
    d. What Imaging Studies Reveal
    e. Radiography(x-rays)
    f. Fluoroscopy
    g. Computed Tomography (CT)
    h. Magnetic Resonance Imaging (MRI)
    i. Ultrasound
    j. Endoscopy.

2. RADIOGRAPHY AND MAMMOGRAPHY

a. Equipment components

b. Procedures for Radiography & Mammography

c. Benefits versus Risks and Costs

d. Indications and contraindications.

3. FLUOROSCOPY

a. Definition
b. Equipment used for fluoroscopy
c. Indications and Contra indications
d. How it helps in diagnosis
e. The Findings in Fluoroscopy
f. Benefits versus Risks and Costs.

4. COMPUTEDTOMOGRAPHY(CT)

a. Definition
b. Equipment used for Computed Tomography
c. Indications and Contra indications
d. How it helps in diagnosis
e. The Findings in Computed Tomography
f. Benefits versus Risks and Costs.

5. MAGNETIC RESONANCE IMAGING (MRI)

a. Definition
b. Equipment used for MRI
c. Indications and Contra indications
d. How it helps in diagnosis
e. The Findings in MRI
f. Benefits versus Risks and Costs
g. Functional MRI.

6. ULTRASOUND

a. Definition
b. Equipment used for Ultrasound
c. Indications and Contra indications
d. How it helps in diagnosis
e. The Findings in Ultrasound
f. Benefits versus Risks and Costs.

7. ENDOSCOPY

a. Definition
b. Equipment used for Endoscopy
c. Indications and Contra indications
d. How it helps in diagnosis
e. The Findings in Endoscopy
f. Benefits versus Risks and Costs.

8. NUCLEAR MEDICINE

a. Definition
b. Equipment used for Nuclear Medicine
c. Indications and Contra indications
d. How it helps in diagnosis.
e. Benefits versus Risks and Cost

PERSONALITY DEVELOPMENT AND STRESS MANAGEMENT

III SEMESTER

COURSE DESCRIPTION

This course is designed to enlighten the students about various personality traits and methods of personality development and stress management

Subject Title	: **Personality Development and Stress Management**
Total Hours / Week	: 2 Hours
Method of Assessment	: Written

COURSE OUTCOME

By successfully completing this course, students will be able to:

- Describe how a personality develops.
- Define the stages of personality development.
- Define personality types.
- Describe basic personality traits.
- Personality and stress.
- Health stress, coping and relaxation.
- Soft skills and personality.

COURSE OUTLINE:

Unit 1

Introduction to Personality Development, Developing Personality, Stages of Development, Types of personality, Theories of personality

Unit 2

How needs impact personality, Maslow‘s hierarchy of need, Basic Personality Traits; Values, Beliefs, Interactions, Experiences, Environmental influences, the big five dimensions.

Unit 3

Stress; causes, effect and types, Stress resistant personalities, Relaxation; training aspects importance and Body works.

Unit 4

Health stress and coping, Understanding and communicating our health needs, Behavioral and psychological correlates of illness.

Unit 5

Soft skill; need and importance, Personality development and soft skills. Effective communication, listening, speaking, writing, interpretation part of soft skills and personality

COUNSELLING AND GUIDANCE **III SEMESTER**

COURSE DESCRIPTION

This course will introduce the student about basics of counseling and guidance and methods to improve the counseling skills

Subject Title	: **Counselling and Guidance**
Total Hours / Week	: 2 Hours
Method of Assessment	: Written

COURSE OUTCOME

At the end of this course, the students will be able to:

- Explain the concepts, theories, ethical issues and basic skills of counseling.
- Explain the attending and listening skills in improving relationships.

COURSE OUTLINE

UNIT I:

Introduction and definition of Counselling and Guidance, Counsellor Preparation, Qualifications, Qualities, Legal and Professional ethics

UNIT- II:

Different approaches to counselling, goals in counselling, role and functions of the counsellor.

UNIT- III:

Micro skills in Counselling- relationship building strategies and methods: Opening techniques, attending skills- verbal and non-verbal communication, Listening skills: Open questions and closed questions, Encouragement, Paraphrasing, Reflection, Summarization, influencing skills-Reframing, genuineness and Self-disclosure.

UNIT-IV:

Macro skills in Counselling, empathy, advanced empathy, Confrontation & challenging, Resistance, transference and counter-transference

UNIT-V: Counselling situations and Counselling across life-span.

COMMUNICATION & SOFT SKILLS III SEMESTER

COURSE DESCRIPTION

This course is designed to improve the communication, interpersonal and logic skills for better placement

COURSE OUTCOME:

At the end of the course, students will be able to

- Foster healthy attitude.
- Develop effective inter and intra personal skills to be an effective team worker.

Communicate effectively in both academic and professional setup

COURSE OUTLINE

UNIT: I ASPECTS OF COMMUNICATION

1.Importance of communication, Process, Barriers

2.Non verbal Communication

UNIT: II SPEAKING

Opening and Closing conversations

2.Introductions and Address Systems

3.Expressing Courtesy

4.Giving Compliments and replying to Compliments

5. Presentation Skills

6. Telephonic conversation and telephone etiquette

UNIT-III PRESCRIBED READING

1.White washing the Fence- Episode from Tom Sawyer by Mark Twain

2.Bacon's Essays: - Of Goodness and goodness of nature

UNIT-IV WRITING

1.Letter writing- Letter of Complaints, Inviting and Declining an invitation

2. Memos and Email

3. Editing- Grammar, Spelling &Punctuation, Use of Dictionary & Thesaurus.

UNIT-V SOFT SKILLS

1. Active Listening Skills

2. Assertive Skills

3. Negotiation and Persuasive Skills

4. Interview Skills

YOGA FOR HEALTH & WELLNESS III SEMESTER

COURSE DESCRIPTION:
In this course, the students will learn the principles and effects of yoga and its uses in medical conditions.

Subject Title	: **Yoga for Health & Wellness**
Total Hours / Week	: 3 Hours
Method of Assessment	: Written

COURSE OUTCOME

At the end of the course, the student will be able to

- Explain the fundamental principles of Yoga ,
- Explain the benefits, indications and contraindications of different Asanas
- Demonstrate basic Yoga practices
- Explain therapeutic applications of Yoga in Physiotherapy,
- Describe the role of Yoga in Self-management of Stress and better academic performance.

COURSE OUTLINE

1. Basic Principles of Yoga
2. Introduction and Definitions of Yoga,
3. Four paths of Yoga
4. Astanga Yoga
5. Hatha Yoga vs Astanga Yoga
6. Understanding different dimensions of Health
7. Concept of Mind / Indriyas
8. Concept of Stress – Eastern and Western
9. Psychosomatic Diseases – Eastern Philosophy and HPA Axis
10. Therapeutic Application of Yoga
11. Concept of Pancha Kosa / IAYT
12. Concept of Health, body and Disease
13. Asana vs Exercises & Shadkriyas (Cleansing Techniques)
14. Concept of Prana and Pranayama
15. Meditation/ Guided Relaxations

16. Yogic Principles and Practices of Healthy Living
17. Role of Yoga in Common/ Psychosomatic Ailments
18. Role of Yoga for Musculoskeletal Disorders
19. Role of Yoga for Neurological Disorders
20. Role of Yoga for Respiratory Disorders
21. Role of Yoga for Psychiatric Disorders
22. Scope of research in Yoga Therapy

Practical's

1. Sukhma Vyayama (Loosening Exercises)
2. Suryanamaskar
3. Standing Postures:
4. Sitting Postures:
5. Padmasana, siddhasana, sukhasana, Yogamudrasana, Virasana, Gomukhasana, Pashchimottansana, Ardha matsyendrasana, Ardha matsyendrasana
6. Supine Postures:
7. Pawanamuktasana, Ardha Halasana, Halasana, Setubandhasana, Naukasana, Matsyasana, Shavasana, sarvangasana, Urdhva dhanurasana, Viparitakarani
8. Prone Postures :
9. Pranayama – Sectional Breathing, Nadishuddi, Bramari, Kaphalabhati
10. Shadkriya – Neti,

NATUROPATHY **III SEMESTER**

COURSE DESCRIPTION:
This course describes about the basic concepts of Naturopathy and basic methods of treatment in Naturopathy.

Subject Title	: **Naturopathy**
Total Hours / Week	: 2 Hours
Method of Assessment	: Written

COURSE OUTCOME

At the end of the course, the student will be able to explain about nature cure, catechism of nature cure, principles and methods of nature cure.

COURSE OUTLINE

CHAPTER I – INTRODUCTION

a) Nature cure
b) Definitions of Nature Cure and History of Naturopathy
c) Three fold constitution of man
d) Two fold attitude of mind and soul
e) Symphony of life
f) Basic Principles of Nature Cure
g) Laws of Nature
h) Violations of Nature

CHAPTER II - CATECHISM OF NATURE CURE

a) Constructive Principle b) Destructive Principle c) Health d) Disease e) Acute disease f) Chronic disease g) Healing crisis h) Disease crisis i) Cure j) Normal/Natural. Primary causes of disease and its manifestations

CHAPTER III – PRINCIPLES & METHODS.

1. Properties of Water, Mud, Air, Sunlight. 2. Health is positive and Disease is Negative. 3. Importance of physical and mental hygiene. 4. Scientific relaxation and normal suggestion.5. Toxins and anti toxins in Nature cure way 6. Nature cures Vs. Modern medicine.

OCCUPATIONAL THERAPY AND SPEECH THERAPY
III SEMESTER

COURSE DESCRIPTION: This course is designed to provide an overview in the basics of Occupational Therapy, Speech and Language Therapy.

Subject Title	: **Occupational Therapy and Speech Therapy**
Total Hours / Week	: 2 Hours
Method of Assessment	: Written

COURSE OUTCOME

At the end of the course, the student will be able to

- Discuss the principles, structure and function and pathophysiology in Occupational therapy effectively.
- Describe about therapeutic modality and health care management in Occupational therapy precisely.
- Discuss the anatomy, physiology and neurological basics of audiology, language, linguistics, phonetics and phonology effectively.
- Describe the language development and speech articulatory disorders respectively.
- Discuss the intervention in autism, psychopathological disorder, basic language and psychomotor development precisely.

COURSE OUTLINE

Occupational therapy

1. Introduction to Occupational Therapy
2. Principles of Occupational Therapy
3. Human Structure and Function in Occupational Therapy
4. Therapeutic Media in Occupational Therapy
5. Therapeutic Modalities in Occupational Therapy
6. Health Care Management in Occupational Therapy
7. Pathophysiology in Occupational Therapy
8. Mental Health in Occupational Therapy
9. Physical Function in Occupational Therapy

Speech Therapy

1. Anatomy and Physiology of the Organs of Language
2. Introduction to Audiology
3. Neurological Basis of Language, Linguistics, Phonetics and Phonology
4. Introduction to Language Disorders
5. Speech Therapy Intervention in Language Development Disorders, Aphasia, Speech Articulation Disorders, Deafness
6. Dyslexias and dysgraphias
7. Stuttering
8. Alternative Systems of Communication
9. Intervention in autism and Psychopathological Disorders
10. Intervention in Basic Language, Psychomotor Development
11. New Educational Methodologies for Children with Auditory Alterations
12. Technology Applied to Speech Processing
13. Speech Therapy Intervention in Cochlear Implantation

ERGONOMICS & INDUSTRIAL PHYSICAL THERAPY

IV SEMESTER

COURSE DESCRIPTION

This course gives an outline about the basics of ergonomics, its need, assessment and analysis for effective implementation. It also describes about the hygiene, injury prevention, use of technology and modification techniques in an industrial set up.

Course Title	: Ergonomics & Industrial Physical Therapy
Total hours	: 30
Hours / Week	: 2 Hours

COURSE OUTCOME

At the end of the course the students will be able to:

- Define ergonomics and list its importance efficiently.
- Describe the ergonomic assessment in detail and explain the analysis for better implementation
- Elaborate the hygiene and injury prevention in Industrial set up
- Describe the use of technology and modifications in Industrial set up.

ERGONOMICS

COURSE OUTLINE

1. INTRODUCTION
1. History of ergonomics
2. Need of ergonomics
3. Domains in ergonomics

2. ERGONOMIC ASSESSMENT
1. Ergonomic cycle
2. Evaluation of ergonomic issues
3. Assessment tools
4. Exit assessment

3. ANALYSIS
1. Job site analysis
2. Job task analysis
3. Avenues and benefits of ergonomics
4. Work hardening

INDUSTRIAL PHYSICAL THERAPY

COURSE OUTLINE

1. Industrial hygiene & Vulnerable workers group and labor law

2. Injury prevention and returning the worker to productivity

3. Ergonomics: Principles, issues related to hand tools, posture and material handling and lifting

4. Prevention of work related injuries and redesigning workspace, designing auditory and visual displays for workers, Occupational stress; Environmental pollution - Noise, Vibration etc.

5. Assistive technology used for stability & mobility to enhance function

6. Appropriate technology, skill transfer, sustainability, disability evaluation, concessions available to persons with disability,

7. Application of & environmental modification techniques to improve quality of life, information, education and communication

DISABILITY EVALUATION AND COMPENSATION IV SEMESTER

COURSE DESCRIPTION

This course describes about the concepts in disability evaluation and the compensation of the disabled.

Subject Title	: Disability Evaluation and Compensation
Total hours	: 45
Hours / Week	: 3 Hours

COURSE OUTCOME

At the end of this course, the student will be able to

- Describe the concept of disability and its evaluation
- Discuss the eligible compensation of the disabled.
- Demonstrate evaluation of disability and eligible compensation

COURSE OUTLINE

• Definition of disability and the disability process
• Concepts of impairment, disability and handicap,
• Attitudes of person with disability, family and community
• Exercise of portrait of disabled person and experiencing disability.
• Needs of people in society
• Link between education, poverty and disability
• Status of persons with disability in India
• Background to social, political and economic issues in India and other low income countries. The effect on the poor who live in rural and urban areas.
• Disability and women
• Different approaches towards addressing the need of persons with disability
• The different models of working with persons with disability

• Introduction to disability issues, different acts, Government schemes and initiatives, legislation, and methods of accessing them.
• Environmental Barriers and promoting barrier free environment
• Simple methods to create a Barrier Free Environment in house, school, Roads,toilets, community levels.
• Methods of disability evaluation – Government of India's notification, Government of Tamil Nadu notification, Mc Bride's method, Phulhems profile, sensory impairment evaluation, Evaluation of respiratory function – Ability index – pulses profile, Kats index of Activities of daily living, Barthel Index, Modified Barthel Index, Kenny self care evaluation, functional classification of patients with diseases of the heart, vocational training.
• Compensation for different disabilities with regards to insurance and with regard to workman compensation act

DIABETIC EDUCATION AND MANGEMENT

IV SEMESTER

COURSE DESCRIPTION

This course incorporates the epidemiology , pathophysiology and complications of diabetes. It includes the Management of diabetes in various situations and the role of a diabetic educator. It comprises of management of diabetic service and communication skills

Course Title	: Diabetic education and Management
Total hours	: 45
Hours / Week	: 3 Hours

COURSE OUTCOME

At the end of the course the students will be able to:

1. Demonstrate transfer of knowledge and skills about diabetes effectively to community
2. Demonstrate various teaching strategies effectively
3. Inculcate sense of compassion and listening to patient needs.
4. Develop excellent communication skills.

COURSE OUTLINE

1. INTRODUCTION:

i) Epidemiology:

Definition, scope and uses of epidemiology, measuring disease frequency (prevalence, incidence rate),Epidemiology and prevention of chronic diseases, different levels of prevention (primodial, primary, secondary and tertiary) Types of studies and study design (qualitative and quantitative designs)

ii) Pathophysiology of Diabetes:

Types and causes, Disease process, Diagnostic criteria, Screening for Diabetes – why, when and how? (Urine sugar and blood sugar), Continuum of care (primary, secondary, tertiary, prevention)

iii) Long term complications:

Macro vascular complication: It includes coronary artery disease, cerebral vascular and peripheral vascular disease – type, risk factors and intervention strategies. Micro vascular complication: Diabetes Eye disease, Neuropathy, Nephropathy – Disease stage, diagnosis and treatment. Other complications (foot, skin, gastrointestinal disorders, endocrine disease, psychological factors, etc.)

2. Management of Diabetes

i) Overview

Aims of treatment, the importance of overall metabolic control, internationally recognized standards of care. The evidence for good control, physical assessment and laboratory assessment.

ii) Role of educator:

Multidisciplinary team approach to Diabetes Education describing the diabetes disease process and treatment option. Incorporating appropriate nutrition management. Goal setting to promote health, problem solving and daily living.

iii) Practical management of Diabetes:

Dietary management, insulin and oral therapy, Avoiding and managing hypo and hyperglycemia, Self _ management strategies during special situations (sick days, travel, hypoglycemic events, etc), Self monitoring (glycemic control & complications related to diabetes), Lifestyle issues, Newer trends in management.

iv) Special considerations:

Diabetes in children and adolescents, Diabetes in pregnancy, Diabetes in the elderly, Diabetes & infection, Diabetes in people living in poverty, surgical considerations in Diabetes.

v) Educational and behavioral interventions:

Principles and practice of patient education, Measure and document patient outcomes, Problems and psychological evaluation in the diabetic patient, Strategies for behavioral changes, Managing stress.

vi) Educational approaches for special situations:

Low literacy, Low income. Mentally or physically challenged individuals, Amputation.

vii) Developing an Individualized meal plan: Diet order, Menu setting, Supervising the diets. Standardization of recipe: To plan, calculate, calculate the nutritive value and demonstrate.

viii) Managing a diabetes service:

The multidisciplinary team, Organizing the Diabetes clinic, Documenting and monitoring the quality of care, Assessing and reporting outcomes. Research Projects on Diabetes.

ix) Practical training:

Anthropometry evaluation, Diet Analysis, Diet Review, Diet prescription, System entries, Calorific values, Demonstration of equipment, Medical history and Medicine review, Patient education, Education questionnaire, Recipe demo.

x) Communication skills:

Role of communication, Defining communication, Classification of communication, Purpose of communication, Major difficulties in communication, Barriers to communication, Characteristics of successful communication-The seven Cs, Communication at the work place, Human needs and communication "mind mapping", information and listening skills.

ONCOLOGICAL PHYSIOTHERAPY

IV SEMESTER

COURSE DESCRIPTION

This course incorporates the pathophysiology of cancer and impact of treatment (surgery, chemotherapy, radiation) on cardiovascular, musculoskeletal and neurological systems including the development of pain, fatigue, muscle wasting, articular and skeletal dysfunction. Specific problems related to different disease sites including breast, lung, and hematological malignancies will be discussed in this course. Case studies will be used to facilitate assessment and decision-making on modalities of treatment in this complex patient population

Course Title	: Oncological Physiotherapy
Total hours	: 45
Hours / Week	: 3 Hours

COURSE OUTCOME

At the end of the course the students will be able to:

1. Recognize and understand the unique rehabilitation needs related to: Cancer diagnosis and treatment
2. Derive assessment protocols based upon outcome measures validated in the cancer population
3. Derive intervention strategies based upon realistic goals and client centered outcomes

COURSE OUTLINE

1. Introduction

Overview of cancer pathology, staging and treatment advances: Impact on cancer rehabilitation interventions Pain, fatigue and muscular effects of cancer and treatment, Hematological & Neurological effects of treatment, Bone metastasis, Positioning for management of patients with bone metastasis

2. Framework for assessment and choice of rehabilitation interventions

Assessment procedure, outcome measures & decision-making , Case studies on assessment & clinical decision- making , Biophysical modalities in patients with cancer: Guidelines for use. Exercise interventions at all stages of disease, Case studies, Decision-making on modalities, exercise testing and prescription,Manual therapy, Functional activity training

3. Overview and specific rehabilitation

Breast cancer & breast reconstruction Breast cancer case studies , Lung cancer - Lung cancer case studies, Hematological cancers, Case studies, Rehabilitation protocols post bone marrow and stem cell transplant

4. Oncological Physiotherapy

Significance of Oncological Physiotherapy, Role of a Physiotherapist in conservative, radiological and surgical management of various types of cancer including Pain management, edema management, bowel and bladder training, musculoskeletal ,neurological and pulmonary training and rehabilitation

GERIATRIC PHYSIOTHERAPY

IV SEMESTER

COURSE DESCRIPTION

This course gives an outline about the process of ageing and the diagnosis and physiotherapy management of various geriatric diseases

Course Title	: Geriatric Physiotherapy
Total hours	: 45
Hours / Week	: 3 Hours

COURSE OUTCOME

At the end of the course the students will be able to:

- Describe process of ageing effectively.
- Discuss the diagnosis and treatment of geriatric diseases efficiently.
- Discuss the nutrition and drugs in older people effectively
- Demonstrate the physical therapy procedures in Geriatric rehabilitation efficiently

COURSE OUTLINE

1. Physiological, biological and social aging
2. Geriatric diseases, diagnosis and treatment regarding sight, hearing, skin diseases, oral health, type 2 diabetes, confusion, osteoporosis, dementia diseases, Parkinson's disease, and stroke
3. Older people's specific health problems and multi-morbidity
4. Nutrition and older people
5. Drugs and older people
6. Older people's health and health promotion
7. Rehabilitation protocols and principles followed in Geriatric Rehabilitation
8. Role of Physical therapist in Geriatric rehabilitation

PHYSIOTHERAPY IN HAND CONDITIONS

IV SEMESTER

COURSE DESCRIPTION

This course gives an outline about the anatomy and assessment of hand. It also describes the physiotherapy of hand in various scenarios and special techniques used by physical therapists.

Course Title	: Physiotherapy in Hand Conditions
Total hours	: 45
Hours / Week	: 3 Hours

COURSE OUTCOME

At the end of the course the students will be able to:

- Describe anatomy of hand effectively.
- Discuss the assessment of hand efficiently.
- Discuss the physiotherapy of hand in multiple clinical scenarios effectively
- Demonstrate the procedure of special physiotherapy techniques used in hand rehabilitation efficiently

COURSE OUTLINE

I. ANATOMY OF HAND

Anatomy of the bones, joints, muscles, ligaments, nerves of the hand

II. ASSESSMENT OF HAND

Subjective assessment, objective assessment on observation tactile, pain, range of motion, edema, sensation (light touch pressure, pain temperature, proprioception, two point discrimination stereognosis, tinnel's sign) manual muscle testing, grip strength , deformities, functional assessment & Psycho social assessment

III. HAND REHABILITATION

- Peripheral nerve injuries
- Tendon injuries
- Tendon transfers
- Amputation
- Rheumatoid Hand
- Hand contractures
- Spastic Hand

IV. SPECIAL TECHNIQUES

Desensitization, motor re education, joint mobilization techniques, soft tissue techniques, scar mobilization, sensory re education, taping techniques, therapeutic exercises.