Bharath
INSTITUTE OF HIGHER EDUCATION AND RESEARCH
(Declared as Deemed-to-be University under section 3 of UGC Act, 1956)
(Vide Notification No. F.9-5/2000 - U.3, Ministry of Human Resource Development, Govt. of India, dated 4th July 2002)
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Bharath Institute of Higher Education and Research (BIHER)

Accredited 'A' Grade by NAAC

(Declared as Deemed -to -be University under section 3 of UGC Act, 1956)

Sree Balaji School of Physiotherapy

CONSTITUENT COLLEGE OF BIHER

CHOICE BASED CREDIT SYSTEM

REGULATIONS

BACHELOR FOR PHYSIOTHERAPY

Undergraduate Degree Programme 2022

BHARATH UNIVERSITY (BIHER)

SELAIYUR,

CHENNAI – 600 073.

The Regulations for the BPT post graduate physiotherapy speciality degree Programme of the BIHER (BHARATH) UNIVERSITY, Chennai.

These Regulations shall comes as prescribed and are subject to modification by the standing academic board from time to time.

REGULATIONS FOR THE BACHELOR OF PHYSIOTHERAPY DEGREE PROGRAMME

In exercise of the powers conferred by Bharath Institute of Higher Education and Research (BIHER- Deemed to be University under 1956 of UGC, Govt. of India) the standing Academic Board of the BIHER, Chennai hereby makes the following Regulations.

1. SHORT TITLE AND COMMENCEMENT:

These regulations shall be called **"REGULATIONS FOR BACHELOR OF PHYSIOTHERAPY" (B.P.T) DEGREE PROGRAMME OF BIHER, Chennai**.

The regulations and are as prescribed under these regulations and are subject to modification by the standing academic board from time to time.

2. AIMS AND OBJECTIVES

AIM: An under graduate programme in physiotherapy is to impart an in- depth knowledge and skill to a student to become competent in the techniques and develop the proper attitude required for the practice of physiotherapy and carry out treatment prescribed by the physician.

OBJECTIVES

a) To prepare compassionate, competent, and ethical entry –level physiotherapists, with the skills and techniques necessary for the physical diagnosis, prevention and management of various conditions based on current evidence of physiotherapy practice.

b) Develops skills and physiotherapy techniques such as therapeutic massage and manual therapy, exercise, electrotherapy, specialized techniques in the field of various specialties relevant to physiotherapy practice.

c) To plan and implement appropriate physiotherapeutic intervention for all clinical conditions related to physiotherapy in acute and chronic phases, critical care, indoor and outdoor institutional care and independent practice.

d) Ability to crucially appraise published literature, interpret data and to broaden his/her knowledge by keeping abreast with modern developments in the respective physiotherapy and thereby enhancing research ability.

e) Development of proper attitude or compassion and concern for the individual and welfare of the physically handicapped in the institution and community levels.

f) To develop skills as a self-directed learner, recognize continuous education, select and use appropriate learning resources.

g) Ability to inculcate appropriate professional relationship in multidisciplinary set up, patient management and co- partnership basis.

3. COURSE OUTLINE

The bachelor degree in physiotherapy is a four-year full time programme with semester pattern of examination.

After passing the eight semesters of education the student undergoes physiotherapy internship for a period of six months in various departments and scores a minimum of 50% marks in the compulsory scoring system after which he/ she is eligible to apply for the convocation.

4. ELIGIBILITY

a) Candidates belonging to all categories for admission to the B.P.T Degree Programme should have passed the higher secondary examination -12th with the following subjects: physics, chemistry and Biology/ Botany and Zoology.

b) Candidates who have studied abroad and have passed the equivalent qualification as determined by the association of Indian Universities will form the guidelines to determine the eligibility and must have passed in the subjects: physics, chemistry, biology (Botany/ Zoology) and English up to 12th standard level.

c) Candidates who have passed the senior secondary school examination of National open school with minimum of 5 subjects with any of the following group subjects.
    1) English, physics, chemistry, Botany, Zoology.
    2) English, Physics, Chemistry, Biology and any other language.

5. AGE LIMIT FOR ADMISSION

A candidate should have completed the age 17 years at the time of Admission or would complete the age on or before 31st December on the year of admission to the B.P.T degree.

6. PHYSICAL FITNESS CERTIFICATE

Every candidate before admission to the course shall submit to the principal of the institution a certificate of medical fitness from an authorized medical officer that the candidates is physically fit to undergo the academic course.

7. ELIGIBILITY CERTIFICATE

Candidates who have passed any qualifying examination other than higher secondary course examination conducted by government of Tamil Nadu shall obtain an eligibility certificates from the university by remitting the prescribed fee along with the application form.

8. REGISTRATION

A candidate admitted to the Bachelor of physiotherapy degree programme in any of the affiliated physiotherapy college shall register with this university by remitting the prescribed fee along with the application form for registration duly filled in and forwarded to this university through the principal of the institution before 7th October of each year of admission.

9. DURATION OF THE COURSE

Four academic years and six months of physiotherapy internship.

10. MEDIUM OF INSTRUCTION

English shall be the medium of instruction for all the subjects of study and for the examination of the Bachelor of physiotherapy degree programme.

11. CURRICULUM

The curriculum and the syllabus for the programme shall be as prescribed by the standing academic board from time to time.

12. COMMENCEMENT OF THE PROGRAMME

The programme will commence from September 1st of every year.

13. CUT OFF DATE FOR ADMISSION

Last date of admission to Bachelor of physiotherapy in 30th September of each year**.**

14. WORKING DAYS IN AN ACADEMIC YEAR

Each academic year shall consist of not less than 100 working days per semester.

15. ATTENDANCE REQUIREMENT FOR ADMISSION TO EXAM

90% of attendance during his/her study and training in the affiliated institutions recognized by this university and producers the necessary certificate of study attendance and progress from the principal of the institution.

A candidate lacking in the prescribed attendance and progress in any one subject in theory and practical in the first appearance shall not be permitted for admission to the entire examination.

16. CONDONATION OF LACK OF ATTENDANCE

No condonation of storage of attendance shall be permitted.

For the participation in NCC/NSS and other co- curricular activities represent the Institution or University, the principal shall instruct the concerned officer's in-charge of the student activities in their Institution to endorse the leave.

17. COMMENCEMENT OF EXAMINATION

Feb 1st/ Aug 1st- If date of commencement of examination falls on Saturday, Sunday and declared public Holidays the examination shall begin on the next working day.

17. MARKS QUALIFYING FOR PASS

To pass the University Examination,

1. A candidate must pass in two heads of passing i.e. Theory and Practical separately at the same time.
2. In the Theory Examination the Candidate must obtain 50 % of the total Marks to pass theory examination irrespective of the parts.
3. To pass in practical exam, candidate must obtain 50% of total marks to pass practical exam.
4. A candidate must obtain an aggregate of 50 % to pass in the respective subjects.

5. a) Candidate has to pass in all subjects from 1st to 6th semester to enter for 7th semester.

b) Candidate should have passed 7th and 8th semesters in each subject to begin CRI

c) 6th and 8th semester to be Break of study, if candidate have failed in these semesters.

18. MIGRATION/ TRANSFER OF CANDIDATE

Migration/ Transfer of candidates from one recognized institution to another Institution of this university or from another university will not be generally considered.

However, under extraordinary circumstances, the Vice- Chancellor shall have the power to place any migration/ transfer that he deems fit in the Governing council and get approval for grant of permission for migration/ transfer to candidates undergoing course of study in affiliated institution of this study.

19. VACATION

The principal shall declare vacation of 2 Weeks in an academic year to the students. The period(s) of vacation can be decided by the principals of the Institution.

20. PHYSIOTHERAPY INTERNSHIP

All candidates admitted to Bachelor of physiotherapy Degree Programme shall undergo Six (6) months of physiotherapy internship in the Institution he/ she has

studied after successful completion of the final Examination in the following Clinical areas.

Sl.No.	Department	Days
1	Orthopedics& Traumatology	30
2	Cardio Pulmonary Sciences	30
3	Neurology	30
4	Rheumatology	15
5	Geriatrics	10
6	Obstetrics & Gynaecology	7
7	Pediatrics	7
8	Oncology	7
9	Burns and Plastic Surgery	14
10	Physical Medicine and Rehabilitation	30

21. AWARD OF DEGREE

The degree will be awarded by the university only after the completion of the physiotherapy internship for a period of not less than six months.

22. AUTHORITY FOR ISSUE OF INTERNSHIP COMPLETION CERTIFICATE

The principals of the Institutions shall issues of successful completion of internship to each candidate after satisfying that the candidate has completed the training programme and has acquired the skills to function independently. Scoring sheets of each candidate inclusive of attendance must be attached.

23. AUTHORITY TO ISSUE "CONSOLIDATED GRADING SYSTEM"

The university shall be the Authority for issuing consolidated grading statement of marks after remitting the prescribed fee to the university.

THE CBCS SYSTEM All Programmes mention shall run on Choice Based Credit System (CBCS). It is an instructional package developed to suit the needs of students to keep pace with the developments in higher education and the quality assurance expected of it in the light of liberalization and globalization in higher education

34. CHOICE-BASED CREDIT SYSTEM (CBCS)

a) Enhanced learning opportunities, ability to match learners' scholastic needs and aspirations, inter-institution transferability of learners(following the completion of a semester),
b) Improvement in educational quality and excellence,
c) Flexibility for working learners to complete the programme over an extended period of time,
d) Standardization and comparability of educational programmes across the country, etc.

ADVANTAGES OF THE CREDIT SYSTEM

a) Represents a much-required shift in focus from teacher-centric to learner-centric education since the workload estimated is based on the investment of time in learning, not in teaching.
b) Helps to record course work and to document learner workload realistically since all activities are taken into account - not only the time learners spend in lectures or seminars but also the time they need for individual learning and the preparation of examinations etc.

c) Segments learning experience into calibrated units, which can be accumulated in order to gain an academic award.
d) Helps self-paced learning. Learners may undertake as many credits as they can cope with without having to repeat all the courses in a given semester if they fail in one or more courses.
e) Alternatively, they can choose other courses and continue their studies. 'Learner Autonomy'.
f) Makes education more broad-based. One can take credits by combining unique combinations.
g) Credits earned at one institution can be transferred to another.
h) Helps in working out twinning programmes.
i) Is beneficial for achieving more transparency and compatibility between different educational structures.
j) A credit system can facilitate recognition procedures as well as access to higher education for non-traditional learners

GRADING: The total of the internal evaluation marks and final University examination marks in each course will be converted to a letter grade on a ten point scale as per the following scheme as recommended by UGC.

CBCS Grading System

Grades and Grade Points

A. Two methods -relative grading or absolute grading– have been in vogue for awarding grades in a course. The relative grading is based on the distribution (usually normal distribution) of marks obtained by all the students of the course and the grades are awarded based on a cut-off marks or percentile.

Under the absolute grading, the marks are converted to grades based on pre-determined class intervals. To implement the following grading system, the colleges and universities can use any one of the above methods.

B. The UGC recommends a 10-point grading system with the following letter grades as given below:

Letter Grades	**Grade Points**
O (Outstanding)	10
A+(Excellent)	9
A (Very Good)	8
B + (Good)	7
B (Above Average)	6
C (Average)	0
F(Fail)/ RA (Reappear)	0
Ab (Absent)	0
NC- not completed	0
RC- Repeat the Course	

C. A student obtaining Grade F shall be considered failed and will be required to reappear in the examination.

D. For non credit courses 'Satisfactory' or "Unsatisfactory' shall be indicated instead of the letter grade and this will not be counted for the computation of SGPA/CGPA.

E. The Universities can decide on the grade or percentage of marks required to pass in a course and also the CGPA required to qualify for a degree taking into consideration the recommendations of the statutory professional councils such as AICTE, MCI, BCI, NCTE etc.,

F. The statutory requirement for eligibility to enter as assistant professor in colleges and universities in the disciplines of arts, science, commerce etc., is a minimum average mark of 50% and 55% in relevant postgraduate degree respectively for reserved and general category. Hence, it is recommended that the cut-off marks for grade B shall not be less than 50% and for grade B+, it should not be less than 55% under the absolute grading system. Similarly cut-off marks shall be fixed for grade B and B+ based on the recommendation of the statutory bodies (AICTE, NCTE etc.,) of the relevant disciplines.

COMPUTATION OF SGPA AND CGPA

As per the UGC recommendation the following procedure to compute the Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA):

A) The SGPA is the ratio of sum of the product of the number of credits with the grade points scored by a student in all the courses taken by a student and the sum of the number of credits of all the courses undergone by a student, i.e

$SGPA\ (Si) = \sum(Ci \times Gi) / \sum Ci$

whereCi is the number of credits of the ith course and Gi is the grade point scored by the student in the ith course.

B) The CGPA is also calculated in the same manner taking into account all the courses undergone by a student over all the semesters of a programme, i.e.

$CGPA = \sum(Ci \times Si) / \sum Ci$

where Si is the SGPA of the ith semester and Ci is the total number of credits in that semester.

iii. The SGPA and CGPA shall be rounded off to 2 decimal points and reported in the transcripts.

Illustration of Computation of SGPA and CGPA and Format for Transcripts

i. Computation of SGPA and CGPA

Illustration for SGPA

Course	**Credit**	**Gradeletter**	**Grade Point**	**Credit Point (Credit x Grade)**
Course 1	3	A	8	3 X 8 = 24
Course 2	4	B+	7	4 X 7 = 28
Course 3	3	B	6	3 X 6 = 18
Course 4	3	O	10	3 X 10 = 30
Course 5	3	C	5	3 X 5 = 15
Course 6	4	B	6	4 X 6 = 24
	20			139

Thus, SGPA =139/20 =6.95

Illustration for CGPA

Semester 1	**Semester 2**	**Semester 3**	**Semester 4**
Credit : 20 SGPA:6.9	Credit : 22 SGPA:7.8	Credit : 25 SGPA: 5.6	Credit:26 SGPA:6.0
Semester 5	**Semester 6**	**Semester 7**	**Semester 8**

Credit : 26 SGPA:6.3	Credit : 25 SGPA: 8.0	Credit : 25 SGPA: 8.0	Credit : 25 SGPA: 8.0

Thus, CGPA = $\frac{20 \times 6.9 + 22 \times 7.8 + 25 \times 5.6 + 26 \times 6.0 + 26 \times 6.3 + 25 \times 8.0}{144} = 6.73$

ii. Transcript (Format): Based on the above recommendations on Letter grades, grade points and SGPA and CCPA, the HEIs may issue the transcript for each semester and a consolidated transcript indicating the performance in all semesters.

BPT CBCS 2024-2025

1 Semester = 20 Weeks Teaching/ 1 Week= 36 Hours

MC Main Core, AR Allied Required, GE General Elective, FC Foundation Core, CT Clinical Training, IT Internship

Sem.	Code No.	Courses	Theory		Practical		Total Hours	Total Credits
			H	C	H	C		
I	15BPT1FC01	Human Anatomy I	60	4	75	2	135	6
	15BPT1FC02	Human Physiology I	60	4	60	2	120	6
	15BPT1AR01	Sociology	60	4			60	4
	15BPT1AR02	Basic, Applied Physics for Physiotherapy	30	2	30	1	60	3
	15BPT1AR03	English and Communication Skills	30	2			30	2
	15BPT1GE01	Basic Nursing and First Aid	30	2	30	1	60	3
	15BPT1GE02	Environmental Science						
	15BPT1CT01	Clinical Training					255	3
II	15BPT2FC01	Human Anatomy II	60	4	90	3	150	7
	15BPT2FC02	Human Physiology II	60	4	75	2	135	6
	15BPT2AR01	Health Psychology	30	2	30	1	60	3
	15BPT2AR02	Biochemistry	30	2	30	1	60	3
	15BPT2AR03	Yoga	30	2	30	1	60	3
	15BPT2GE01	Basic Computer Science	30	2	30	1	60	3
	15BPT2GE02	Artificial Intelligence						
	15BPT2CT02	Clinical Training					255	3
III	15BPT3MC01	General medicine, Geriatrics and Paediatrics	60	4	60	2	120	6
	15BPT3MC02	Exercise Therapy I	60	4	45	1	105	5
	15BPT3FC01	Biomechanics	45	3	45	1	90	4
	15BPT3AR01	Pathology	45	3	45	1	90	4

	15BPT3FC02	Fitness and Sports Physiotherapy	45	2	45	1	90	3
	15BPT3GE01	Radiology	30	2	30	1	60	3
	15BPT3GE02	Bioengineering						
	15BPT3CT03	Clinical Training					255	3
IV	15BPT4MC01	General Surgery, Pharmacology and Plastic Surgery	60	4	45	1	105	5
	15BPT4MC02	Exercise Therapy II	60	4	60	2	120	6
	15BPT4MC03	Massage Therapy	45	3	60	2	105	5
	15BPT4AR01	Microbiology	45	3	30	1	75	4
	15BPT4AR02	Obstetrics and Gynaecology	45	3	30	1	75	4
	15BPT4GE01	Key hole Surgery	30	2	30	1	60	3
	15BPT4GE02	ENT Disorder						
	15BPT4CT04	Clinical Training					255	3
							795	30
V	15BPT5MC01	Electrotherapy I	60	4	60	2	120	6
	15BPT5MC02	Clinical Orthopaedics	60	4	45	1	105	5
	15BPT5MC03	Clinical Neurology and Neurosurgery	45	3	45	1	90	4
	15BPT5FC01	Non-invasive procedure	45	3	45	1	90	4
	15BPT5GE01	Medical Terminology & Record Keeping	30	2	30	1	60	3
	15BPT5GE02	Data Science						
	15BPT5CT05	Clinical Training					255	3
							720	25
VI	15BPT6MC01	Electrotherapy II	60	4	60	2	120	6
	15BPT6MC02	Clinical Cardiovascular	60	4	45	1	105	5

		conditions for Physiotherapist						
	15BPT6MC03	Clinical Reasoning and Evidence Based Physiotherapy	45	3	45	1	90	4
	15BPT6AR01	Community Medicine	45	3	45	1	90	4
	15BPT6GE01	Professionalism and values	30	2	30	1	60	3
	15BPT6GE02	Healthcare Management						
	15BPT6CT06	Clinical Training					255	3
							720	25
VII	15BPT7MC01	Physiotherapy in Orthopaedic Conditions	60	4	75	2	135	6
	15BPT7MC02	Physiotherapy in Neurological Conditions	60	4	75	2	135	6
	15BPT7MC03	Clinical Respiratory conditions for Physiotherapist	45	3	15	1	60	4
	15BPT7AR01	Research Methodology & Biostatistics	30	2	45	1	75	3
	15BPT7GE01	Diagnostic Imaging for Physiotherapist	30	2	30	1	60	3
	15BPT7GE02	Dietetics and Nutrition						
	15BPT7CT07	Clinical Training					255	3
							720	25
VIII	15BPT8MC01	Physiotherapy in Cardiorespiratory Condition	60	4	75	2	135	6
	15BPT8MC02	Rehabilitation Medicine including Geriatric Rehabilitation	60	4	75	2	135	6
	15BPT8MC03	Physiotherapy Law, Ethics and Medico Legal	60	4			60	4
	15BPT8GE01	Administration and Teaching Skill	30	2	30	1	60	3
	15BPT8GE02	Quality and Patient Safety						
	15BPT8PJ01	Research Project and Dissertation	30	2	45	1	75	3

	15BPT8CT08	Clinical Training					255	3
							720	25
IX	15BPTIT01	Internship Training					960	15
		Minimum 960 hours based on 8 hours per day, 120 working days in six month duration						

SEM I	(15BPT1FC01) HUMAN ANATOMY I	L	P	T
		60	75	135
Requisite	Students should possess a basic Knowledge in Human Anatomy.			
Objective	1.To develop a basic knowledge in Osteology, Arthrology and Myology as necessary for the study as well practice of Physiotherapy. 2. To acquire knowledge on Tissues, their structure, Growth in normal human. 3. To obtain vascular system related scientific knowledge of upper and lower extremities. 4. To learn on peripheral Nerves with their plexus and innervation of upper and lower extremity muscles, skin, joints			
Modules	**CONTENTS**			
Unit I	Anatomy and mention its Course divisions - anatomical positions and anatomical terms- introduction to bones: Joints, muscles, Cell, Nerve, Blood vessel.			
Unit II	Classification of tissues - classify and mention the microscopic structure, types of tissues such as epithelial, connective, muscular and nervous tissue -General embryology theories of development – gestation – gametogenesis – fertilization – implantation – development of skeletal system.			
Unit III	Upper extremity - Osteology- myology –arthrology – Nerves – Blood Vessels - lymphatic drainage-miscellaneous			
Unit IV	Lower extremity- Osteology –myology –arthrology – Nerves – blood vessels – lymphatic drainage -miscellaneous			
Unit V	The Pelvis Muscles of the pelvic wall - sacral plexus - pelvic fascia - urinary bladder - ureters - urethra - uterus – vagina – ovary - rectum – anal canal - vas deferens - seminal vesicles - Sacro iliac joint - pubic symphysis - sacrum.			

Text Books:

1. Clinical anatomy by regions – RICHARD S SNELL'S 9 th edition 2012 wolter kluwer

2. Human anatomy – BD CHAURASIA'S VOL 1, 2 , 3, .6 th edition 2013 CBS

Reference Books:

1.Human anatomy – T S RANGANATHAN 2000 S Chand and co

2.Clinical neuroanatomy – RICHARD S. SNELL – 7 th edition 2010 wolter kluwer pubisher

Journal:

1. INTERNATIONAL JOURNAL OF ANATOMY & RESEARCH.

2. NATIONAL JOURNAL OF CLINICAL ANATOMY SCOPE MED.ORG.

Specific Learning Outcomes:

1.Learner should be able to identify the bone, side, parts, joints, muscles and surface anatomy of Upper extremity, lower extremity and Pelvis.

2. After completion of the Anatomy course learned candidate, expected to obtain knowledge and able to Analyse normal functioning of Nerves, Vascular supply of both upper and lower extremities with Ailments to be learnt later.

3. Gets familiar to apply learned knowledge on human body structure including joints, Nerves, Muscles of both Arms and legs and relates to physiotherapy techniques later.

4. Acquaints with critical thinking, by comparing normal structure and functioning with Abnormal structure and functioning of human body, using evidence and able to identify underlying cause of physical and functional deviations with problem solving skills.

SEM I	(15BPT1FC02) HUMAN PHYSIOLOGY I	L	P	T
		60	60	120
Requisite	Should be Familiar with parts of Human Body			
Objective	1.To acquire knowledge on structure and function of human skin, haematology, respiratory, digestive and excretory system. 2. To learn on cell, Tissues, Classification, Location, Functions 3. To obtain details of centres for temperature regulations, Factors influencing human body temperature. 4. To know basic human body physiological structure and function and relates to application of physiotherapy practice in normal and Abnormal functioning.			
Modules	**CONTENTS**			
Unit I	Cell introduction outline of basic concept of cell structure - function of components - transport across membranes. - cell biology –membrane biology – molecular biology-skin structure – functions - blood flow - temperature regulation. Blood and cardio vascular system.			
Unit II	Outline of components; and their functions; rbc, wbc, platelets, plasma proteins - significance of rbc and wbc counts, esr and other related tests - homeostasis, clotting mechanisms - blood volume and its regulation - .structure and properties of cardiac muscle - cardiac cycle - ecg; heart sounds - cardiac output and venous return - heart rate and factors regulating the action of the heart - blood pressure; its maintenance and regulation, cardiovascular reflexes.			
Unit III	Respiration defense mechanism in the respiratory tree; mucociliary transport and mechanics of respiration - transport of blood gases, acid-base balance - lung function tests (including lung volumes). Artificial ventilation - nervous and chemical regulation of respiration - effects of exercise on respiration - breath sounds.			
Unit IV	Digestion &excretion - Digestion in the mouth, stomach and intestine - bile; pancreatic secretion - mechanism of control of secretions and motility - movements of the alimentary tract - gastrointestinal hormones - apud cells - diet and nutrition.			
Unit V	Excretory system; structure of the nephron - formation of urine – micturition - renin angiotensin system - renal function test - acid base balance			

Text Books:

1.Concise medical physiology - CHAUDHARI S.K 7th edition 2016 NCBA

2.Human physiology - CHATTERJEE CC – 11th edition 2016 CBS

Reference Books:

1.Textbook of medical physiology - GUYTON .ARTHUR -13th edition 2013 Elsevier

Journal:

1. NATIONAL JOURNAL OF PHYSIOLOGY, PHARMACY & PHARMACOLOGY.

2. THE JOURNAL OF PHYSIOLOGY WILEY ONLINE LIBRARY.

Specific Learning Outcomes:

1.After attending above lectures, demonstration, cadaver, assignments, evidenced literature learner shall be able to acquire knowledge on structure and function of cell, normal blood values, haematology, respiratory, digestive and excretory system.

2. Gets familiar with normal and Abnormal human structure and their physiological functioning with evidenced literature.

3. Develops an attitude to think critically and plan physiotherapy based on deviations from normal relevant to age, Gender, Physiological status thus gets more stronger foundation from this course for quality of physiotherapy practice.

SEM I	(15BPT1AR01) SOCIOLOGY	L	P	T
		60	-	60
Requisite	Understanding of social factors in hospital, clinic, family on medical treatment and physiotherapy practice.			
Objective	1.To became aware and gain knowledge on social groups, changes, problems, factors influencing related to health and disease 2. To learn and get familiar with importance of human values, respect for culture, religion and social responsibilities. 3. To obtain knowledge related to altitude, Belief, Family and use for patients benefit in health and Diseases. 4. Familiar with family, social problems related to Health, Disease. 5. To learn are correlate social evil, Habits on various Health issues, Disorders. 6. To acquire details on sickness, Disability and preventive means legislation, and role of social scientific. 7. To study social problems.			
Modules	**CONTENTS**			
Unit I	Introduction Definition of Sociology. Sociology as a science, uses of the study of Sociology, application of knowledge of sociology in Physiotherapy. Sociology and health Social factors affecting the health status, social consciousness and perception of illness, social consciousness and meaning of illness, decision making in taking treatment. Institutions of health, their role in the improvement of health and the people. Socialization Meaning of socialization, influence of social factors on personality, socialization in hospital and socialization in rehabilitation of patients. Social control Meaning of social control, role of norms, folkways, customs, morals, religions, laws and other means of social control in the regulation of human behaviour, social deviance and disease.			
Unit II	Social groups Concepts of social groups, influence of formal and informal groups on health and sickness, the role of primary groups and secondary groups in the hospital and rehabilitation settings. Family Influence of family on human personality, discussion of changes in the functions of a family, influence of family on the individual's health, family and nutrition. The effects of sickness on family and psychosomatic disease. Community Concepts of community, role of rural and urban communities' public health, role of community in			

	determining beliefs, practices and home remedies in treatment. Culture Components of culture, impact of culture on human behaviours cultural meaning of sickness, response to sickness and choice of treatment (role of culture as social consciousness in moulding the perception of reality). Culture induced symptoms and diseases, Course-culture of medical workers. Caste system Features of the modern caste system and its trends.	
Unit III	Social change Meaning of social changes, factors of social change, human adaptation and social change, social change and stress, social change and deviance, social change and health programmes, the role of social planning in the improvement of health in rehabilitation.	
Unit IV	Social problems of the disabled Consequences of the following social problems in relation to sickness and disability, remedies to prevent these problems.	
Unit V	Population explosion Poverty and unemployment Beggary Juvenile Delinquency Prostitution Alcoholism Problems of women in employment Social Security Social security and social legislation in relation to the disabled. Social worker The role of a medical social worker.	

Text Books:

Sachdeva. D.R.and Bashan. V.: An Introduction to Sociology, Allahabad, Ki tab Mahal Limited - 1974.

General and Medical Sociology :Dr.P.Ramasamy

Reference Books:

Madan, G.R.: Indian Social Problems, Vol-I, Madras. Allied Publications – 1973

Journal:

1.Journal of Health and Social Behaviour

2.International Journal of Medical Sociology and Anthropology

Specific Learning Outcomes:

1.Along with lectures, rural camps, field visits, relevant to above details learner shall be able to know on social factors influencing on health, disease, challenged among society. Also social needs in hospital, clinic, care givers, social worker's role, social evil. These shall enable candidates ability to evaluate, design physiotherapy with critical inputs from sociological factors.

2. Able to analyse social factors influence on human functioning and Health.

3. Espected to relate later with socio economic factors to most Diseases, Disorders develops an analytical skill

4. Acquires knowledge on social influence on health in family community, Hospital, Daily living with scientific evidence and learns social responsibilities as Health care professional.

5. By learning on social habits, Poverty, develops Research attitude towards preventive behaviour changes for positive healthy living were promoted for Individual, society for Healthy living.

SEM I	(15BPT1AR02) BASIC, APPLIED PHYSICS FOR PHYSIOTHERAPY	L	P	T
		30	30	60
Requisite	Basic knowledge on forces, levers, fuse, electricity and their relevance to physiotherapy practice and equipment			
Objective	1.To acquire knowledge on mechanics, pulleys, capacitors, condenser and valves. 2. To learn various principles factors influencing, Progression, Applications of Forces, Lever, Gravity pulleys and relate with human body functioning. 3. To analyse on friction, Elasticity speed, Velocity, Power, Acceleration on Human body movements with their applications responsible factors, ways to overcome related to physiotherapy practice, mobility Aid appliances. 4. To get familiar with using exercise gadgets, Application of Biomechanics on patients to ensure patients safety and care of exercise equipment and Gadgets. 5. To know theory, Laws, Parts and Functioning of Electro Diagnosis and Electro therapy equipments. 6. To know ways of preventing electric shock, earth shock, Burns with their causes enables to patient and equipment care, quality and standard of practicing physiotherapy.			
Modules	**CONTENTS**			
Unit I	Mechanics: Definition of mechanics and Biomechanics - Force - Definition, diagrammatic representation, classification of forces, concurrent, coplanar and co-linear forces, composition and resolution of forces, angle of pulls of muscle - Speed, Velocity, Work, Energy, Power, Acceleration, Momentum - principles, and practical application - Newton's Laws – Friction - Elasticity - Definition, stress, strain, HOOKE'S Law Gravity - Definition, line of gravity, Centre of gravity - Equilibrium			
Unit II	Pulleys - - Levers - Definition, function, classification and application of levers in physiotherapy& order of levers with example of lever in human body - Currents: DC AND A.C Currents -Modern concept of electricity: fundamental electric charges			

Unit III	Capacitors: Electric field around a capacitor, charging and discharging a capacitor, types of capacitor with–Rheostat: series and shunt Rheostat with application of each in the Physiotherapy department - Effects of electric Current: Thermal effect, chemical effect (ionization) and magnetic effect, Electric shock, Earth shock, causes and its prevention - Magnetism: Magnetic - non-magnetic substances and their properties, molecular theory, poles of magnet and its properties, magnetic lines of force and their properties, Electromagnetism &LAWS	
Unit IV	Condenser – Potential & capacity, Principles, factors determining capacity, construction. Electric field, charging & discharging and use of condenser in electrotherapy - Cosine law and its implications - Physical effects of heat and radiation. Laws governing radiation -. Units of electricity: farad, volt, ampere, coulomb, watt - resonance: in series & in parallel - potentiometer: - fuse: - transmission of electrical energy through solids, liquids, gases and vacuum - shock, safety precautions and management - burns: electrical & chemical: prevention & management	
Unit V	Thermionic valves: thermionic emission, diode and triode valves and their characteristics, construction and application of cathode ray oscilloscope - semiconductor devices: intrinsic and extrinsic semiconductors, light emitting diodes, integrated circuits moving coil millimetre: construction, working and uses. Transformer: definition-types-principle-construction-eddy current-working uses chokes: principle-construction and working-uses. Metal oxide rectifier	

Text Books:

1.Clayton’s electrotherapy theory and practice – FORSTER & PALASTANGA 8 th edition – 2007 CBS

2.Therapeutic exercise – CAROLYN KISNER 6 th edition -2012 – jaypee brothers medical publishers

Reference Books:

1. R K Gaur – 2011 dhanpat- rai publications (p) ltd new Delhi

2. Electrotherapy explained principles and practice – LOW and REED 4 th edition – 2006 – Elsevier health – uk

Journal:

1.Journal of Basic and Applied Physics

2. Indian Journal of Physics

Specific Learning Outcomes:

1.Candidate on attending lectures, lab demonstrations shall be able to have greater knowledge of forces, gravity, equilibrium, lever, AC, DC currents, fuse, capacitors, condenser, CRO, transformer, thermionic valves and their place in physiotherapy equipment with care, safety and prevention of burns and shock.

2. Preparedness for employable skills

3. Developed skills related to safety of patient, equipment ad quality of practice.

4. Learned skills and knowledge from this course with improved confidence promoted their aptitude to learn further courses.

SEM I	(15BPT1AR03) ENGLISH AND COMMUNICATION SKILLS	L	P	T
		30	-	30
Requisite	Candidate should have basic knowledge in English			
Objective	To develop comprehension in English			
Modules	**CONTENTS**			
Unit I	Introduction Study Techniques Organisation of effective note taking and logical processes of analysis and synthesis - The use of the dictionary Enlargement of vocabulary Effective diction			
Unit II	Applied Grammar: Correct usage - the structure of sentences - The structure of paragraphs - Enlargements of Vocabulary.			
Unit III	Written Composition - Precise writing and summarising - Writing of bibliography - Enlargement of Vocabulary			
Unit IV	Reading and comprehension - Review of selected materials and express oneself in one's words - Enlargement of Vocabulary.			
Unit V	The Study of Various Forms of Composition Paragraph, Essay, Letter, Summary, Practice in writing, Verbal Communication - Discussions and Summarization, Debates, Oral reports, use in teaching.			

Text Books:

1.Wren and Martin - Grammar and Composition, regular edition revised by N.D.V PRASDA RAO Chand .& Co, Delhi

Reference Books:

1.English Communication Dr.Bhiba Devi

Journal:

1. International Journal of English Learning & Teaching Skills

2. The International Journal of Communication and Linguistic Studies

Specific Learning Outcomes:

Candidates are expected to develop linguistic skills with understanding spoken English, communicate with due writing, understand and comprehend developing greater soft skill with grammar, vocabulary and comprehend related to case discussion, documentation, discharge summary, co-curricular events related to the programme in physiotherapy.

SEM I	(15BPT1GE01) BASIC NURSING AND FIRST AID	L	P	T
		30	30	60
Requisite	Familiar with first aid and nursing procedures			
Objective	Acquire basic nursing and first aid skills and related knowledge on transfer, feeding, turning and vital signs			
Modules	**CONTENTS**			
Unit I	Basic Nursing Introduction- Nursing Principles-Inter personal relationship-Bandaging, Basic Turns, Bandaging extremities, Triangular Bandages and their application - Nursing position: Environment safety, Bed making, prone, lateral, dorsal, dorsal recumbent, fowler's positions, comfort measures, aids to rest and sleep - Lifting and Transporting Patients: Lifting patients up in the bed, transferring from bed to wheel chair, transferring from bed to stretcher- Providing For Patients Elevation: Giving and taking Bed Pan, Urinal, Observation of stools, urine observation of sputum, understand use and care of catheters, enema giving			
Unit II	Methods of Giving Nourishment: Feeding, Tube feeding, Drips, Transfusion - Care of Rubber Goods: Observation, Reporting and Recording Temperature, Respiration and Pulse, Simple Aseptic Technique, Sterilization and Disinfection. - Surgical Dressing: Parental Administration of Medicine.			
Unit III	First Aid. General Principles of First Aid – Wounds, Control of Haemorrhage, Epistaxis.			
Unit IV	Shock – Bites – Burns & Scalds – Heat Exhaustion, Heat Stroke and Fainting, Frost Bite – Fractures, Dislocations, Sprains and Strains – Poisoning – Epileptic Fits, Convulsions in children – Aspiration of foreign body.			
Unit V	Artificial Respiration (CPR) – Bandages and Different Types – Unconsciousness and General Principles of Treatment.			

Text Books:

1.First Aid – Red Cross Society

2.First Aid – St. Johns Ambulance Association

3.Basic Nursing by Dr, Mona Megahed

Reference Books:

1.Textbook on First Aid & Emergency Nursing by I. Clement
2.Fundamentals of Nursing by Dr.N.Murugesh

Journal:

1.International **Journal *of* First Aid** Education

2. https://www.indianredcross.org/publications/FA-manual.pdf

Specific Learning Outcomes:

1.With due lectures, demonstration on dummy models, patients on above topics candidate shall be able to have the like skills and knowledge on vital signs, bed making, transfer, lifting, transportation of fractures, shock, unconscious patients.

2. Further first aid, CPR, care of catheter, various monitoring lines, patency of drains with due recording, care and their importance, enable to work with confidence and greater competency with quality of care.

3. An ability to work as team in First aid and emergency situation preparedness for employability.

Candidate acquires knowledge on the importance of vital signs, Documentation of patient details which can be related to Physiotherapy practice.

SEM I	(15BPT1GE02) ENVIRONMENTAL SCIENCE	L	P	T
		30	30	60
Requisite	Awareness of natural resources			
Objective	Develop knowledge on environmental issues on health, preventive means			
Modules	**CONTENTS**			
Unit I	Pollution- Air- Noise on health- disease- prevention			
Unit II	Health issues on sanitation, water natural disaster- on human body functioning			
Unit III	Sustainable goals of UN on health, disease and disability			
Unit IV	Disease with cost, complications-Global warming on health, hazards			
Unit V	Water deprival- contamination- calamities- occupation disease, disorder			

Text Books:

1.Keller, E.A. 2011. Introduction to Environmental Geology (5th edition). Pearson Prentice Hall. Krishnan, M. S. 1982. Geology of India and Burma. CBS Publishers & Distributors. Reference Books: Bridge, J. & Demicco, R. 2008.

Reference Books:

1.Holmes' Principles of Physical Geology. Taylor & Francis. Gupta, A. K., Anderson, D. M., & Overpeck, J. T. 2003.

2.Abrupt changes in the Asian southwest monsoon during the Holocene and their links to the North Atlantic Ocean. Nature 415: 354-357. Gupta, A. K., Anderson, D. M., Pandey, D. N., & Singhvi, A. K. 2006.

Journal:

1.Journal of Environmental Sciences

2.Environmental Science and Pollution Research

Specific Learning Outcomes:

As environmental issues stated above, learner becomes familiar on environmental friendly behaviour, practice of physiotherapy while developing employability skills and evidence knowledge

SEM I	(15BPT1CT01)CLINICAL TRAINING	L	P	T
Requisite	Willing to apply learned knowledge on real life situations			
Objective	Exposure to hospital environment and understand health status of patient			
Modules	**CONTENTS**			
Unit I	Cadaver Study and Laboratory Study for Anatomy and Physiology			
Unit II	Community Field Visit for Sociology			
Unit III	Field visit to SCARF for Psychology			
Unit IV	Clinical Observation			
Unit V	Co - curricular Activities			

Text Books:

A practical guide on physiotherapy assessment for physiotherapy students- Gopal nambi

Reference Books:

Essentials of physiotherapy clinical practice – Alman niaz

Journal: Journal of clinical physiotherapy research

Specific Learning Outcomes:

Candidate in I semester following clinical training should develop knowledge and skills in observation, social influence on patients, psychological impact on health, know the importance of human body functioning with muscles, joints, organs in health and disease status

SEM II	(15BPT2FC01) HUMAN ANATOMY II	L	P	T
		60	60	120
Requisite	Familiar with normal Human Body parts.			
Objective	1.To acquire knowledge on surface landmark on vertebral column osteology, visceral organs, brain, nervous system, their influence on normal surface, landmark, morphology, functioning and abnormalities with clinical conditions. Specimen demonstration, cadaver, 3D video demonstration, bone identification 2. To learn on vascular supply of Thorax, Head and Neck, Abdomen and Brain. 3.To Gain knowledge on development on development parts of Brain, Spinal cord and Tracts, their functions. 4. To develop detailed scientific knowledge of visceral organs with their Nerve, Vascular supply and functions. 5. To obtain detailed knowledge of Nervous system with their functions. 6. To learn on applied Anatomy on lesions of Thorax, Brain, Head and Neck, Abdomen which can be related to physiotherapy practice.			
Modules	**CONTENTS**			
Unit I	THORAX Osteology – thoracic vertebrae - ribs - sternum -Myology – extensors in the thoracic region - abdominals Arthrology – type, articular surface, muscle, ligments, blood supply, nerve supply and movements with applied of - joints of thorax -Thoracic wall – pericardium – heart, aorta – lungs - pleura – oesophagus – veins as thoracic sysmpathetic chain - thoracic duct - azygos vein - thymus - mechanics of respiration - trachea			
Unit II	ABDOMEN Anterior abdominal wall, diaphragm - lumbar region - rectus sheath - inguinal canal - peritoneum - Coursephernic spaces - peritoneal recesses - spleen – stomach – duodenum - liver - pancreas - portal vein - jejunum and ilieum – appendix - colon - kidneys - lumbar vertebral column - perineum - urogenital triangle - anal triangle – scrotum – testes – penis - bilary system.-Arteries – celiac artery - mesenteric artery - renal circulation abdominal aorta			
Unit III	HEAD AND NECK -Scalp – fascial muscles – muscles of mastication - lacrimal apparatus – parotid gland- thyroid gland – parathyroid gland – triangles of neck – digastrics triangle - carotid triangle – posterior triangle – muscular triangle – Coursemandibular gland – Courselingual gland – tongue – olfactory system – nasal cavity – sinuses – fascia –			

	carotid artery – Courseclavian artery – Courseclavian vein	
Unit IV	BRAIN -Development of brain and spinal cord – spinal – tracts – meninges – arteries of brain and spinal cord – circle of wilis – blood brain barrier – cerebral cortex – fornix – internal capsule – cerebellum – pons – medulla – midbrain – ventricles and CSF – thalamus – hypothalamus- basal ganglia	
Unit V	AUTONOMIC NERVOUS SYSTEM- Sympathetic & Parasympathetic control	

Text Books:

1. Human anatomy – BD CHAURASIA'S VOL 1, 2 , 3, .6 th edition 2013 CBS

2.Clinical neuroanatomy – RICHARD S. SNELL – 7 th edition 2010 wolter kluwer pubisher

Reference Books:

1.Clinical anatomy by regions – RICHARD S SNELL'S 9 th edition 2012 wolter Kluwer

2. Human anatomy – T S RANGANATHAN 2000 S Chand and co

Journal:

1. INTERNATIONAL JOURNAL OF ANATOMY & RESEARCH.

2. NATIONAL JOURNAL OF CLINICAL ANATOMY SCOPE MED.ORG.

Specific Learning Outcomes:

1.Expected to acquire knowledge on structure orientation, morphology, surface landmarks, functions. Also abnormal functioning following injury, genetic, metabolic, infections, malignant conditions influencing head, neck, thorax, visceral organs and brain.

2.With knowledge, critical thinking, learner gets informed on problem solving skills of these structures related to clinical presentations.

3. Prepares for employability and decision making with physiotherapy techniques and medical procedures.

4. Gets familiar with normal and Abnormal Anatomical structures of Human body and develops an Analytical abilities, using scientific reasoning enables to develop due physiotherapy evaluation and therapy later, thus laying foundation for the practice of physiotherapy practice.

SEM II	(15BPT2FC02) HUMAN PHYSIOLOGY II	L	P	T
		60	60	120
Requisite	Models, charts and familiar with various parts of human body.			
Objective	1.To define and describe physiological functions of endocrine, reproductive, nervous, muscular system, and to discuss physiology on special sense. 2. To learn on Endocrine system, with details of their structure, function on Human body impact on dysfunctions, Factors influencing their functions. 3. To gain knowledge on Reproductive organs of Male, Female, Mensural cycle. 4. To acquire detailed knowledge of various Nervous system, Tracts, their connections, Innervations and influence on their lesions on Human functioning. 5. To know with senses of their structure function, influencing factors of each sense to Human body use along with Abnormalities of senses. 6. To learn on details of muscles, types of contraction, Mechanism, Factors influencing and effects of exercises on muscular contractions. 7. To correlate normal and abnormal functioning of Endocrine, Reproductive, Nervous, Senses and Muscular system helps the learner with due foundation for effective practice of physiotherapy later.			
Modules	**CONTENTS**			
Unit I	Endocrine-General metabolism, carbohydrates, protein and fat metabolism - outline of the various hormones and their actions with special emphasis on thyroid gland , parathyroid gland , adrenal cortex, pancreas , pituitary gland and applied			
Unit II	Reproduction-Male reproductory system - female reproductory system - Outline of pregnancy; functions of placenta; parturition; lactation, contraceptive measures, menstrual cycle - physiology of fetus; factors that affect fetal growth.			
Unit III	Nervous system- CNS, PNS, ANS and connections			
Unit IV	Special senses. Vision – audition - olfaction – gustation - vestibular apparatus - test for vision and hearing			

Unit V	Muscle-Structure of muscle tissue; gross structure and microscopic structure. Arrangement of myofibrils. Myoneural junction - chemical processes involved in muscle contraction - physiology of muscle contraction, single muscle twitch, effect of exercises	

Text Books:

1.Concise medical physiology - CHAUDHARI S.K 7th edition 2016 NCBA

2. Human physiology - CHATTERJEE CC – 11th edition 2016 CBS

Reference Books:

1.Textbook of medical physiology - GUYTON .ARTHUR -13th edition 2013 elsevier

Journal:

1. NATIONAL JOURNAL OF PHYSIOLOGY, PHARMACY & PHARMACOLOGY.

2. THE JOURNAL OF PHYSIOLOGY WILEY ONLINE LIBRARY.

Specific Learning Outcomes:

1.Structure and functioning of endocrine, reproductive, nervous, sensory and muscular system of normal human and their relevant parameters learner gets normal parameters, abnormal conditions from relevant factors affecting these systems.

2. This prepares students for employability of evaluation and choosing due physiotherapy techniques along with critical analysis using research evidence.

3. Having learnt this course, Candidate knows to Analyse Human muscle contractions, with their mechanisms, Factors influencing, and types of muscle, Role of exercises with muscle metabolism enables a deeper learning with reasoning of human movement production which forms core of physiotherapy practice.

4. Having learnt the Nervous system, Muscular system and sensory system with their role in Human body harmonious functioning develops an Ability to integrate with evidenced learning on multiple structures, Many system influencing on Healthy or Disease state of Human body functioning.

5. These leads to critical thinking of knowing how body works what went wrong in lesions, which situations body functioning can go wrong with scientific questioning ability.

SEM II	(15BPT2AR01) HEALTH PSYCHOLOGY	L	P	T
		30	30	60
Requisite	Familiar with factors on growth, development and the importance of behaviour and ill health			
Objective	1.To understand and acquire knowledge on definition, intelligence, personality, stress, paediatric and geriatric psychology. 2.To develop knowledge on how genetics, environment influence on human behaviour. 3. To obtain scientific lectures on Intelligence, Motivation, Emotion, Personality with types factors involved and their role on Mental Health. 4. To learn in detain on causes of stress, their impact on Human functioning mechanisms. 5. To obtain knowledge on ways of communications and Counselling. 6. To learn on principles of behaviour modifications of children, Adult, Geriatrics, Substance abuse. 7. To know the basics of evaluation of Intelligence, Personality, Perception and Behaviour. 8. To learn and correlate how psychology and its components helps to better physiotherapy practice.			
Modules	**CONTENTS**			
Unit I	DEFINITION OF PSYCHOLOGY:Definition of psychology, basic information in relation to following schools methods and branches. - Schools: Structuralism, functionalism, behaviorism psychoanalysis, Gestalt psychology. - Methods: Introspection, observation, inventory and experimental method. - Branches: General, child, social, abnormal, industrial, clinical, counselling educational. HEREDITY AND ENVIRONMENT:Twins - relative importance of heredity and environment - their role in relation to physical characteristics - intelligence and personality - nature-nature controversy. DEVELOPMENT AND GROWTH BEHAVIOUR			
Unit II	INTELLIGENCE**:** Definitions-IQ - Mental age - list of various intelligence testes – WAIS, WISC, Bhatia's performance test- Raven's progressive matrices test. MOTIVATION:Definitions: - motive- drive-incentive and reinforcement - basic information about primary needs-hunger – thirst – sleep - elimination activity – ail - avoidance of pain - attitude to sex. EMOTIONS:Definitions - Differentiate from feelings - physiological changes of emotion - Rule of RAS – hypothalamus - cerebral cortex - sympathetic nervous system - adrenal gland - heredity			

	and emotion - nature and control of anger - fear and anxiety	
Unit III	PERSONALITY:Definitions, List the components: Physical characteristics character abilities - temperament interest and attitudes - Discuss briefly the role heredity, nervous system - physical characteristics – abilities - family and culture on personal development - Basic concepts of Freud; Unconscious – conscious – id - ego and superego list and define the oral - anal and phallic genital latency stages of personality development. List and define the eight stages as proposed by Erickson, four concepts of learning as proposed by Dollard and Miller; drive, cue, response and reinforcement - Personality assessment - interview - standardized and non-standardized - exhaustive and stress interviews - list and define inventories BAL, CPI and MMPI. Projective tests: Rorschach, TAT and sentence completion test. SENSATION, ATTENTION AND PERCEPTION:List the senses: Vision, hearing - olfactory - gustatory and cutaneous sensation, movement, equilibrium and viscera sense - Define attention and list factors that determine attention- nature of stimulus intensity - color, change, extensity, repetitions, movement size curiosity, and primary motives - Define perception and list the principles of perception: figure ground, constancy, similarity, proximity, closure, continuity, values and interests, past experience context, needs, moods, religion, sex and age, perceived benefits and socioeconomic status - Define illusion and hallucination - List visual, auditory, cutaneous, gustatory and olfactory hallucination. REACTIONS TO LOSS: Reactions to loss, death and bereavement: shock and disbelief, development of awareness, restitution resolution. Stage of acceptance as proposed by Kubler – Ross.	
Unit IV	STRESS**:** Physiological and psychological changes, relation to health and sickness, psychosomatics, professional stress, burnout. COMMUNICATIONS:Types – verbal, non – verbal, elements in communication, developing effective communication, specific communication techniques - Counseling: Definition, Aim, differentiate from guidance, principles in counseling and personality qualities of counselors. GERIATRIC PSYCHOLOGY: Specific psychological reactions and needs of geriatric patients.	
Unit V	PAEDIATRIC PSYCHOLOGY**:** Specific psychological reactions and needs of pediatric patients. BEHAVIOUR MODIFICATION**:** Application of various conditioning and learning principles to modify patient behavior, group behavior. SUBSTANCE ABUSE: Psychological aspects of substance abuse: smoking, alcoholism and drug addiction.	

Text Books:

1. General Psychology by S.K.Mangal

2.Dream Psychology: Psychoanalysis for Beginners" by Sigmund Freud

Reference Books:

1. Textbook of Clinical Psychology" by M S Bhatia

2. "Clinical Psychology: Topics in Applied Psychology (TAP)" by Professor Graham Davey

Journal:

1.International Journal of Psychology

2.Psychological Science

Specific Learning Outcomes:

1.Candidates having learnt above topics in psychology using lectures, test charts, inpatient evaluation shall be able to know the genetic factors, behaviour patterns, personality traits, learning methods, intelligence, stress, motivation, stress of geriatric, paediatric and substance abuse shall acquire knowledge skills in various psychological tests, and develops employable abilities while evaluating patients and treating using learnt psychological related skills.

2. Learner gets familiar with importance of personality, Perception and Motivation, Key components of any medical intervention thus learned the ways to work along with psychologist, developing team culture.

3. Having understood on stress and its role in many Neurological illness candidates after learning this course learns to integrate stress management as critical component of Pain, Neuro, Psychological diseases and disorders as with evidenced.

4. This develops holistic care and multidisciplinary needs of care of Patient up on completion of this course.

SEM II	(15BPT2AR02) BIOCHEMISTRY	L	P	T
		30	30	60
Requisite	Familiar with laboratory conduct and human body functioning			
Objective	1.To acquire knowledge on normal and abnormal lab values and discuss on metabolism of carbohydrates, proteins and fats. 2. To know the importance of minerals, Vitamins their sources, Deficiency and means of measuring with their normal values. 3. To get familiar with Blood, Urine, Bio makers, Vitamins, Hormones, Enzymes with their normal values, Sources, Disease related and Abnormal functioning. 4. To gain knowledge on various ways to collect, Human samples laboratory tests used in Bio chemistry.			
Modules	**CONTENTS**			
Unit I	Introduction to Biochemistry as on allied science to medicine, Blood and urine investigations of normal & abnormal urine samples- Carbohydrates – structure and general nature – Biological importance – classifications, polysaccharides & their physiological importance.			
Unit II	Lipids – structure and general nature – classification, biological membranes and membrane transport.-Proteins – structure and functional aspect of hemoglobin, myoglobin collagen and cellular proteins (their names only).			
Unit III	Enzymes – specificity and factors affecting enzyme activity intra cellular and extra cellular enzymes, isoenzymes – clinical significance of alkaline phosphates, acid phosphates and cholinesterase, creative phosphokinase- Metabolic pathways related to carbohydrate and lipid metabolism, their names and significance only. Disorders of carbohydrate metabolism, hyper and hypoglycemia – glycosuria diabetes mellitus – types – biochemical changes.			
Unit IV	Metabolic pathways – related to protein metabolism – their names and significance only – amino aciduria, alkalpatonuria, nuclear acid metabolism gout- Vitamins – fat soluble and water soluble – their source, requirement, special requirements, - biochemical functions & deficiency state			
Unit V	Minerals and trace elements & their role in growth and development disorders of calcium. Phosphorus metabolism muscular dystrophies.- Fundamentals of nutrition & dietetics.			

Text Books:

1. Textbook of biochemistry for medical students -VASUDEVAN – 7th edition 2013 jaypee

Reference Books:

1. Illustrated biochemistry - MURRAY HARPER – 30th edition 2015 Mc –Graw Hill education

Journal:

1.THE JOURNAL OF BIOCHEMISTRY, OXFORD JOURNALS.

2.THE INTERNATIONAL OF BIOCHEMISTRY AND CELL BIOLOGY – ELSEVIER.

Specific Learning Outcomes:

1.Students having acquired theoretical knowledge, practical in laboratory of estimation of blood, urine, expected to know normal values of laboratory parameters. Link abnormality to physical condition, disease. Further importance of vitamins, minerals, electrolytes, various metabolism with their influence on human body functioning.

2.Developing how to interpret lab values acquire analytical ability to clinical condition. Referring skills promotes an independent practice and patient centric care with an evidenced physiotherapy practice.

3.With an added knowledge on biochemistry to employability, develops inter-professional skills with communication and behaviour.

4. With above course candidate can develop collaborative, Research attitude of how physical, and electrical agents can impact on Human Body, their functioning using Biochemistry parameters as qualitative tools, Thus laying a strong foundation with Research aptitude this course benefited the learner.

SEM II	(15BPT2AR03) YOGA	L	P	T
		30	23	53
Requisite	Physically fit to perform yoga with knowledge on breathing and body movements			
Objective	1.To develop adequate knowledge on different yoga postures, mudras, evaluation and application of yoga. 2. To learn on contributions to Yoga by Indian, Types of yoga and Basic principles of yoga with scientific learning and Reasoning. 3. To get familiar with yoga, Mudras, Pranayama, Meditation for their concepts, Uses, Effects, Limitations and Contra indications. 4. To develop knowledge on how yoga, Meditation can improve Human life, prevent Diseases, Disorders and ways to include to Physiotherapy.			
Modules	**CONTENTS**			
Unit I	Yoga postures and its types - pranayama its effects limitations care points and indications integration of yoga with physiotherapy for self and patient care			
Unit II	History of yoga philosophy and fundamentals of yoga			
Unit III	Application of yoga its therapeutic effects Surya namaskar breathing practices four paths of yoga-Hatha yoga Patanjali yoga pastures and body alignment supine sitting prone lying understanding			
Unit IV	Evaluation prognosis care points - limitations -clinical indication-Therapeutic effects contraindications of of various yogasanas			
Unit V	Bandha - Mudras -Kriyas -pranayama- meditation			

Text Books:

1.Sing S.P and Yogi Mukesh: Foundation of Yoga, Standard Publication, New Delhi, 2010.

Reference Books:

1. Dr. Nagendra H.R: Asana, Pranayama, Mudra, Bandha, Swami Vivekananda yoga Prakashan; Bangalore, 2002.

Journal:

1.Journal of Yoga & Physical Therapy.

2.International Journal of Yoga Therapy.

Specific Learning Outcomes:

1.Having acquired theoretical knowledge and practical skill of ways to do yoga, mudras, breathing, kriyas, meditation with their care, clinical effects, indications and contraindications shall develop employable skills, entrepreneurship means of this course as key learning outcomes.

2. Develops confidence to practice Yoga, Mudra, Meditation for self-Health betterment.

3. Gets an idea of critical thinking of which component can be included for patients problem with reasoning ability.

4. Candidate after theoretical and practical skills of above course, could integrate yoga, Meditation, Mudras in their physiotherapy practice with scientific reasoning of when and where can be developed, This promotes a Research aptitude with clinical reasoning.

SEM II	(15BPT2GE01) BASIC COMPUTER SCIENCE	L	P	T
		30	30	60
Requisite	Should have basic knowledge in computer usage			
Objective	1.To understand basic computer science application and to develop skills on internet, basic MS office and profile preparation 2. To know ways of using communication for learning for Academics, Research with Email form published Articles and other electronic media sources for professional betterment. 3. To get familiar with storing typed material, Preparation of PowerPoints, Diagrams, Charts, Graphs. 4. To learn on ways to store Documentation, their Safety and confidentiality using electronic media. 5. To know how to prepare Biodata, Store patients details gets familiar with digital world.			
Modules	**CONTENTS**			
Unit I	Basics of computer Introduction to computer- Characteristics of computer, History of Computer, Generation of Computer, Classification of Computers, IT Application- Hardware and software - Input Devices , Output Devices, Central Processing Unit, Components of CPU, Memory Unit, CISC and RISC, Peripheral Devices, Input and output devices , Operating system – DOS, WINDOWS ETC			
Unit II	Internet- Email, social networking, application in medicine, browsing journals and article using internet**.**			
Unit III	BASIC MS OFFICE – MS WORD, EXCEL POWER POINT - Importance of computer in physiotherapy**.**			
Unit IV	Internet and its application- Packet switched networks, what is Internet? ,Types of Information Available on internet ,Internet Address, Organizational Domains, Internet Protocol Address, Getting Connected to Internet, Types of Internet Access, Direct Connections, Internet Services, ISDN (Integrated Services Digital Network), NICNCT, Archie Wide Area Information Server (WAIS), World Wide Web (WWW) , Tele Conferencing, Video Conferencing, UPLOADING AND DOWNLOADING DOCUMENTS.			
Unit V	PROFILE PREPARATION AND APPLIED INTERNSHIP.			

Text Books:

1.Course on Computer Concepts (CCC) – Professor. Sathish Jain- BPB Publications

Reference Books:

1.Computer Fundamentals- Concepts, Systems and Applications by Pradeep K.Sinha

Journal:

1.Journal of Computer Science

2.Journal of Computer Science and Technology

Specific Learning Outcomes:

1.Candidates having learnt above topics expected to develop communication skills and documentation with employability, entrepreneurship skills. Acquire research related matters in medical arena mainly in physiotherapy of global competency.

2. Can effectively communicate for professional enrichment from experts globally for doubts arising from subjects learned, as these promotes critical thinking and use best resources with digital era.

3.Learner gets familiar with usage of Videos, Three dimensional views of structures ways to use smart Boards, PowerPoint, developed greater confidence, and communications skills.

4. Promoted a conductive learning environment linked to Physiotherapy practice with patients and communication needs among other profession.

SEM II	(15BPT2GE02) ARTIFICIAL INTELLIGENCE	L	P	T
		30	30	60
Requisite	To become familiar with emerging trends, implications in health			
Objective	To develop ideas on AI, its scope, neural networks, problem solving, AI based devices and use of AI in clinical practice			
Modules	**CONTENTS**			
Unit I	Artificial Intelligence- Introduction- Scope- Concepts			
Unit II	Neural networks- Pattern recognition- Speech recognition-Algorithm-Simulation- Automation- Robotics			
Unit III	Problem solving-Planning and Decision making- Machine learning			
Unit IV	AI based devices- Technologies – Applications related to physiotherapy			
Unit V	Artificial intelligence in clinical practice- Implications- Evidences			

Text Books:

1. Artificial Intelligence – A Modern Approach (3rd Edition)– By Stuart Russell & Peter Norvig

Reference Books:

1.Machine Learning for Dummies– By John Paul Mueller and Luca Massaron

Journal:

1.Journal of Artificial intelligence research

2.International Journal of Artificial intelligence

Specific Learning Outcomes:

Candidates should develop basic knowledge of artificial intelligence in various medical fields including physiotherapy.

SEM II	(15BPT2CT02) CLINICAL TRAINING	L	P	T
Requisite	Willing to apply learned knowledge on real life situations			
Objective	Exposure to hospital environment and understand health status of patient			
Modules	**CONTENTS**			
Unit I	Cadaver Study and Laboratory Study for Anatomy and Physiology.			
Unit II	Community Field Visit for Sociology.			
Unit III	Field visit to SCARF for Psychology.			
Unit IV	Clinical Observation			
Unit V	Co-curricular Activities			

Text Books: A practical guide on physiotherapy assessment for physiotherapy students- Gopal nambi
Reference Books: Essentials of physiotherapy clinical practice – Alman niaz
Journal: 1. Journal of clinical physiotherapy research 2.Indian journal of clinical anatomy and physiology
Specific Learning Outcomes: Candidate in II semester following clinical training should develop knowledge and skills in observation, social influence on patients, psychological impact on health, know the importance of human body functioning with muscles, joints, organs in health and disease status.

SEM III	(15BPT3MC01)GENERAL MEDICINE, GERIATRICS AND PAEDIATRICS	L	P	T
		60	45	105
Requisite	Knowledge of Human Body functioning aging process growth of a child.			
Objective	1. To develop knowledge on infectious diseases with their details on organism, mode, prevention. 2. To acquire evidenced knowledge on Renal failure, Diabetes, Obesity, Myocardial infarction, Hyper tension with their risk factors, prevalence, complications, clinical manifestations and medical management. 3. To become familiar with ageing on their theories, impact on various system, clinical features and their management medically. 4. To disseminate scientific literature about Growth development up to the age of 12 years, Vaccination schedules, Clinical conditions their medical and surgical management. 5. To have more literature clinical evidence on Genetic disorder various paediatric condition their clinical laboratory details along with the medical management.			
Modules	**CONTENTS**			
Unit I	Mode of spread, Prevention of infectious diseases – Tetanus, TB, leprosy, Herpes, Hepatitis, Measles, German measles, HIV, Filariasis, Anemia,- Hemophilia.			
Unit II	Acute and Chronic renal failure UTI – Diabetes mellitus – Hypertension - obesity myocardial infarction.			
Unit III	Aging theories – Influence on Cardio Respiratory, Nervous, metabolic, Higher mental function – complications.			
Unit IV	Growth and Development Birth to 12 year complications – Immunization – Neo Natal conditions – Evaluation – Investigations – Medical – surgical management			
Unit V	Genetic disorders of children – cerebral palsy – muscular dystrophy – spinabifida – Hydrocephalus – mal Nutrition – deficiencies – lung infections in childhood			

Text Books:

1.DAVIDSON – principles of practice of medicine 22nd edition 2014

2.Kumar & Clerks – Clinical Medicine 7th edition 2009

Reference Books:

1.Geriatric Medicine – Evidence Based Approach – Christine K. Cassel, 4th edition 2003

2.Brocklehurst's textbook of Geriatric medicine and gerontology 8th edition by fillit, Howard M., editor

Journal:

1. Journal of internal medicine

2. European journal of general medicine

Specific Learning Outcomes:

Candidate following learning above courses content through lectures, Demonstrations on real life patients, who are medically, and surgically treated as outpatient, in words, from community camps expected to learn details of evaluation investigations, medications, surgical procedures of Paediatric, Geriatric and various medical condition with relevant to physical therapy practice with knowledge employ ability and research outcome.

SEM III	(15BPT3MC02) EXERCISE THERAPY I	L	P	T
		60	45	105
Requisite	Basic knowledge of joints, Muscles, Cartilages functioning of musculo skeletal system, Neurological system, Basic physics			
Objective	1.To develop knowledge on various structures benefits of choosing starting derived position for treatment. 2.To acquire techniques care limitations of pain moments and their applications 3.To know and apply various types of human muscles works, joint mobility with techniques care limitations and contraindications 4.Candidate should acquire knowledge of arthrology and myology as key component in the practice of physiotherapy. 5.This course learner expected to obtain knowledge and skill related to exercise therapy in prescription of walking and mobility aids based on patients functional needs. 6. To learn when to use coordination exercises, what to expect, Principles, Care points, Indications, effects with due evidence and reasoning skills. 7. To know principles of hydrotherapy ways of how it can be used for therapeutic purpose, effects, care with use and when not to use with Research. 8. To obtain skill and knowledge on PNF, PRE, Passive movements, stretching, Gait training with their principles, how to progress, Limitations when to use, how to evaluate the prognosis are to be taught with dumming models, real life patients and scenarios. 9. To learn and analyse with reasoning of exercise evaluation, Techniques and when and where to apply, what to expect prepares the learner for practice of Physiotherapy.			
Modules	**CONTENTS**			
Unit I	Introduction to exercise therapy -types of muscle fibres-types of skeletal muscle contraction-range of muscle work			
Unit II	Mechanical principles of exercise therapy - Axes and Planes, Kinetic chains, acceleration, friction, pelvic tilt - types of motion			
Unit III	Starting position - derived Positions. Active and passive movements principles- passive stretching, passive joint mobilization and itprinciples			

Unit IV	Coordination exercises its indications principles and application. Breathing exercises and relaxation exercises. Gait - phases of gait- Mobility Aids its types recent advancement in wheelchairs and frames	
Unit V	Muscle re-education -MRC grading - principles of motor re-education PNF Proprioceptive Neuromuscular Facilitation -key points principles and basics. Hydrotherapy - basics, physics of water, hydrostatic pressure, indications, biological effects in in various systems of human body and contraindications for Hydrotherapy. Progressive Resisted Exercises - principles, RM and types of PRE.	

Text Books:

1.Principles of Exercise Therapy - DENA GARDINER 4th edition2007

2.Therapeutic Exercises - CAROLYN KISHNER 6th edition2012

Reference Books:

1.Margaret Hollis - Practical Exercise Therapy 4th edition 1999

2.Facilitated stretching – Robert E.McAtee, Jeff charland 4th edition 2013

3.PNF in practice - susan s. adler, dominiekbeckers math buck 3rd edition 2008

Journal:

1.Journal of orthopaedic and sports physical therapy

2.Journal of exercise therapy and rehabilitation

Specific Learning Outcomes:

1.Candidate was prepared for employability with techniques in Exercise therapy with an understanding, greater interest and confidence.

2.Develops critical reasoning on with choosing due exercise technique with research evidence

3.Promote analytical skills of underlying cause and abilities of how much affected subject can be treated with the exercise techniques prepare for independent decision making enabling to become an entrepreneur with physiotherapy.

4. As this course was carried with PPT, Research evidence, skills applied, evaluated on dummy models, Real life patients, expected to develop an attitude to respect human sufferings and need to serve the needy population.

5. This course has made the learner needy with due details an Exercise gadgets, walking equipments, Techniques, related skills and can later co relate and synthesise these with clinical scenarios on patient centric needs. Thus forming a greater base with scientific practice.

SEM III	(15BPT3FC01) BIOMECHANICS	L	P	T
		45	45	90
Requisite	The learner should be knowledgeable on anatomy physiology and basic physics.			
Objective	1.To acquire knowledge on force, motion, equilibrium gravity, related to human body 2.To learn literature evidence on peripheral joint, effect of joint immobilization and diseases on joints. 3.To obtain scientific knowledge on muscle, movement related to human body functions. 4.To gain knowledge of joint reaction force, their effects and methods to evaluate. 5. To analyse on how Gravity can be used to promote movements, Improve muscle strength ways to improve daily functions of injured joints, Immobilisation, Diseases and medical conditions with literature support. 6. To demonstrate on how mechanical principles can influence on human body in normal and Abnormal conditions with reasoning. 7. To explain on Bio mechanical evaluation of joints, muscles, Posture and human functioning to be integrated with ways to integrate in to physiotherapy practice later with clinical scenarios. 8. To gain knowledge of how bio mechanical factors influences on daily living, self-care, walking with disease, Habits, Disorders, Trauma, Age, Gender, Environments and disability.			
Modules	**CONTENTS**			
Unit I	Mechanics - types of motion and its planes forces gravity Newton's laws of motion concurrent and parallel force system moment arm. Anatomical Pulleys - equilibrium of a lever			
Unit II	Joint structure and function -classification of joints -kinematic chain - general effects of injury and diseases			
Unit III	Muscle structure and its function - mobility and stability functions of the muscle - types of muscle contraction - speed and angular velocity - torque - isokinetic exercise - Tonic & phasic muscles - factors affecting muscle function - active and passive insufficiency			
Unit IV	Biomechanics of the joints in appendicular skeleton - Shoulder complex, Elbow complex, Wrist joint and Joints of hand complex in detail.			

	Biomechanics of joints in the axial skeleton - kinetics and kinematics of joints in the vertebral column, sacroiliac joint and costovertebral joints.	
Unit V	Joint reaction force – Definition, Types and effects, Methods to evaluate joint reaction forces.	

Text Books:

1.Joint Structure And Function - Pamela K Levange , Cynthia C. Norkin 5th edition 2011

2.Basic Biomechanics of the Musculoskeletal System by Margareta Nordin & Victor H. Frankel

Reference Books:

1.Basic biomechanics – susan J.hall 7th edition 2014

2.Gait analysis normal and pathological function – Jacqualin perry Judith M.buenfield 2nd edition 2010

Journal:

1.Journal of Biomechanics (Elsevier)

2.American Kinesiology Association.

Specific Learning Outcomes:

1.Candidate learner's employ ability skill with research based evidenced knowledge of global competency.

2.Expected to acquire competency on human body analysis with its causes risk factors and enable on decision making abilities, with greater confidence.

3.Learner expected to develops various factors in functioning muscles, joint, mechanism on human body functioning and its abnormalities

4. Learner got familiar to integrate Anatomy, Physiology, Basic Physics and Bio chemistry, develops an ability to think how to use Biomechanical principles with Exercise therapy gadgets usage and techniques related to exercises with reasoning abilities.

5. As biomechanics and its applications forms basic of Physio practice, Sports conditions, Functional rehabilitation of various conservative, Surgical conditions having learnt these details, should have developed an interest and better attitude to serve society and held people with challenges were promoted.

SEM III	(15BPT3AR01) PATHOLOGY	L	P	T
		30	45	75
Requisite	Should have basic information on human anatomy, physiology and applied aspects			
Objective	1.To Knowledge on injury related to pathology 2.To development pathological process of information and repair. 3.To obtain scientific knowledge of tumour 4.To get knowledge of pathological investigations in various Neuro, cardiovascular, musculoskeletal condition. 5. To understand and Analyse probable prognosis of Procedure, Prognosis with Pathological diagnosis and relates to Physiotherapy practice.			
Modules	**CONTENTS**			
Unit I	Introduction- General pathology – cell injury, causes , Reversible injury – Types, morphology, swelling, hyaline, fatty change , Irreversible injury – Types of necrosis, apoptosis, calcification, dystrophic, Metastasis - Concepts of disease			
Unit II	Inflammation and repair- Acute inflammation – causes, features, examples, Inflammatory cell and mediators, Chronic inflammation – causes, features, examples , wound healing , Regeneration and repair.			
Unit III	Circulatory disturbance -Edema - Chronic venous congestion – Thrombosis-. Embolism -Infarction –Gangrene - Shock			
Unit IV	Growth disturbance- Atrophy - Neoplasia(benign& malignant)			
Unit V	Specific pathology -CVS – atherosclerosis, IHD, MI, HT, CCF, RHD, peripheral vascular diseases- RS – COPD, pneumonia – lobar, Broncho, viral, acquired, TB – prim & sec, Atelectasis, asthma- Skin – leprosy -NS – CVA, coma, polio, Parkinsonism, myasthenia gravis- Bone and joint – arthritis, osteomyelitis, autoimmune disease, spondylosis, Osteomalacia, GOUT,-Tenosynovitis, AS -Muscle – MD, polio, myopathies			

Text Books:

1. Text Book of Pathology -HARSHMOHAN 6th edition2010.

Reference Books:

1.Basic Pathology –ROBBINS 9th edition2013.

2.Textbook of pathology for BPT students-Ramadassnayak 1st edition 2016.

Journal:

1.American journal of pathology

2. Journal of clinical pathology –BMJ Journals

Specific Learning Outcomes:

1. Candidate upon learning acquires due knowledge on injury inflammation, Tumour, Medical conditions.

2. Various Clinical conditions related to cardio vascular, musculoskeletal, respiratory systems, Neurology, with Pathological basis.

3. Further knowledge on laboratory means of pathology related to Above course were learnt and correlated with care, Effects, Limitations, Techniques, Modalities of Physiotherapy, Prognosis were to be integrated later.

4. Having got an insight, Importance of confirmatory diagnosis by Pathologists, Lab technologists, following this course, Candidate learns how team work and collaboration is vital for greater physiotherapy practice.

SEM III	FITNESS AND SPORTS PHYSIOTHERAPY (15BPT3FC02)	L 30	P 30	T 60
Requisite	Knowledge on Physical activity, Psychology, Exercise physiology, Anatomy, Bio mechanics, Physics.			
Objective	1.To obtain Knowledge on Components of Physical Fitness. 2.To develop Sports Diet, Nutrition details, Risk factors and Global guidelines with evidence. 3.To learn Movement Science 4.To learn Scientific Knowledge on Sports Psychology and Various Sports Conditions with Physiotherapy techniques. 5. To learn skills related to evaluation, training principles, Effects, Care limitations, with evidence on Physical fitness of Normal, and Sports subjects. 6. To acquire details of Diet, Psychology, Fitness, Physiotherapy, Medical conditions, Injuries, Age, Gender affects sports subjects with their performance with scientific literature. 7. To analyse the influence of various Human Body, Adaptation, Preventive means related to fitness and Sports using logical thinking with Research materials.			
Modules	**CONTENTS**			
Unit I	Physical fitness components, on strength, Flexibility, Endurance, Body composition. Skinfold measurement, Body fact index MET's Vo2 max evaluation.			
Unit II	**Sports** Nutrition, Diet – Guidelines – Diet Analysis – Weight control – Risk factors Health issues – related to Diet and Exercises.			
Unit III	Neuro muscular basis of movement – Motor learning theories – performance physiological adaptation of cell; endocrine, Neurological, Cardiovascular system to endurance strength, power – detraining effects.			
Unit IV	Clinical sports condition - Epiphyseal injuries, Upper limb injuries, Lower limb injuries, Abdomen injuries and Spinal injuries and Muscle, Tendon and Ligament injuries, Training principles stress management – Injury prevention and treatment with training.			
Unit V	Sports - Psychology – Sports management with Exercises, Exercise at altitude Electrotherapy – Thermography – Techniques.			

Text Books:

1.ACSM's Guidelines for Exercises testing and prescription 10th Edition

2.Essentials Exercise Physiology – Victor L.Katch, William D. Mc Ardle 4th Edition

Reference Books:

1.Sports Injury Prevention and Rehabilitation 1st Editionby David Joyce

2.Sport and Exercise Science: An Introduction by Dean Sewell ,Dean A. Sewell

3.Exercise PhysiologyNutrition, Energy, and Human Performance by William D. McArdle, Frank I. Katch, Victor L. Katch.

Journal:

The International Journal of Sport Nutrition and Exercise Metabolism

Journal of the International Society of Sports Nutrition

Specific Learning Outcomes:

1.Expected to link Anatomy, Physiology, Biomechanics, Psychology and Physics related to sports injuries.

2. Should be familiar with importance of sports related diet, psychology, hence learns to work multi-disciplinary skills, Team work related means of behaviour and Synthesise for society benefit

3.Developed competency on clinical decision making with sports physiotherapy in relevant, thus developed research and employable skills.

4. Students learns how to integrate various techniques in sports physiotherapy including biomechanics, electro therapy and exercise therapy on patients clinical scenarios and functional needs.

SEM III	(15BPT8CT08) RADIOLOGY	L	P	T
Requisite	Basic Physics, Basic Imaging Techniques, Radiology Investigations.			
Objective	1.To understand the basics of X-Ray, Ultrasound, Doppler, Imaging and usage in Medical conditions. 2. To familiarise with limitation, Safety, Contra indication of Radiological investigations related to the scope of physiotherapy. 3. To understand and know the need to refer to physician or Radiologist for Investigations. 4. Develop ability to interpret normal and Abnormal values and relate with physiotherapy. 5. To learn on espected recovery, Complications related to CT, MRI, Imaging procedures.			
Modules	**CONTENTS**			
Unit I	X-ray, ultrasound, Doppler, CT, MRI – Isotope imaging Introduction.			
Unit II	Indications – Procedure – contra indication – clinical importance on structures.			
Unit III	Interpretation – scales, Rates scores, normal – Abnormal value reasoning – Relevance to medical conditions – Need for procedures requires.			
Unit IV	Limitation – cost – complications – relevant to physiotherapy.			

Text Books: 1)Handbook of Head and Neck Imaging 2)Head and Neck Imaging- Peter Som.
Reference Books: 1)Brant and Helms' Fundamentals of Diagnostic Radiology Book 2) Textbook of Radiology and Imaging: 2-Volume Set by David Sutton Book**.**
Journal: Indian Journal of Radiology and Imaging The European Journal of Radiology

Radiological Society of North America (RSNA) Journals
Specific Learning Outcomes: 1.Developed related knowledge to work as multidisciplinary team member. 2. Learnt relevant need to refer by analysis of patients conditions related radiological investigation findings.

SEM III	(15BPT8FC01) BIOENGINEERING	L	P	T
Requisite	Physics, Computer, Artificial Intelligence.			
Objective	1.To obtain knowledge related to Bio engineering and Physiotherapy. 2. To get familiar with sensors to be used for Research relevant to Physiotherapy. 3. To under standard Bio engineering with Rehabilitation team for patients using evidence. 4. To acquire knowledge of Bio informatics in Physiotherapy, Fitness, Vital signs monitoring.			
Modules	**CONTENTS**			
Unit I	Introduction & Concepts in Bioengineering- Classification of bio engineering			
Unit II	Bio Engineering Concepts- Principles-Aids & Application in Bio Engineering			
Unit III	Biosensors -Bioreactor - Processing Units- Machine Design & Handling			
Unit IV	Computation- Laboratory- Instrumentation- Bioinformatics - Interpretation of biological data			
Unit V	Role of Bioengineering in rehabilitation and clinical practice- Evidences.			

Text Books:

1.Biomedical Engineering Handbook by Robert C. Weast; Joseph D. Bronzino

2.Encyclopedia of Biomaterials and Biomedical Engineering by Gary L. Bowlin (Editor); Gary E. Wink

Reference Books:

1.Introduction to Biomedical Engineering by John Enderle and Joseph Bronzino

2.Introduction to Bioengineering Y C Fung

Journal: Journal of Biological Engineering Journal of Bioscience and Bioengineering
Specific Learning Outcomes: 1.Learnt to relate research using Bio sensors in physiotherapy. 2. Developed recent advances of application and analysis of Bio informatics for Clinical, Fitness and Research means. 3. Acquired employability and entrepreneurship skills.

SEM III	(15BPT3CT03) CLINICAL TRAINING	L	P	T
Requisite	Willing to apply learned knowledge on real life situations and Patient handling			
Objective	Exposure to hospital environment and understanding the various types of incision and condition related meditation.			
Modules	**CONTENTS**			
Unit I	Clinical Observation for General Medicine, General Surgery Department			
Unit II	Laboratory posting for Pathology and Microbiology			
Unit III	Field visit for Fitness, Exercise therapy, Massage			
Unit IV	Community Health Camp			
Unit V	Co-Curricular Activities			

Text Books:

A practical guide on physiotherapy assessment for physiotherapy students- Gopal nambi

Reference Books:

Essentials of physiotherapy clinical practice – Alman niaz

Journal:

1.Journal of clinical physiotherapy research

2.Indian journal of clinical anatomy and physiology

Specific Learning Outcomes:

Candidate in II semester following clinical training should develop knowledge and skills in observation, social influence on patients, psychological impact on health, know the importance of human body functioning with muscles, joints, organs in health and disease status.

SEM IV	GENERAL SURGERY,PHARMACOLOGY & PLASTIC SURGERY (15BPT4MC01)	L	P	T
		60	45	105
Requisite	Learner should have knowledge of basic medical conditions vital signs human body normal and abnormal functioning.			
Objective	1. To obtain knowledge on various abdominal incision their indications and complications. 2. To gain scientific information related to burns. 3. To know of various drugs used with their effects, mode of delivery side effects. 4. To become familiar with key hole surgery, Breast surgery with their Indication, Incision and complications. 5. To develop knowledge in detail on various plastic surgery procedure care and complications, limitations.			
Modules	**CONTENTS**			
Unit I	Outline the incision and is complication of abdomen – Mastectomy – Hysterectomy – Colostomy – Hernioraphy- Appendicectomy – Illestomy – Thyroidectomy – Adrenalectomy – Prostatectomy.			
Unit II	Burns – Classification BY WALLACE RULE OF NINE, types of Burns injuries based on depth – Deformities due to burns – wound care.			
Unit III	Respiratory Pharmacology e use of bronchodilator – Air way clearance – cancers – antimititics – antimetabolites – irradiation radioactive materials – cancers. Inflammatory diseases – Endocrine disorders – Diabetes mellitus and Insulin therapy – Arthritic conditions – Chemotherapy bacterial infections – drugs – microorganism – Sulfonamides antibiotics floxacins – parasitic infestation malaria, amoeba, filariasis – flagellates.			
Unit IV	Key hole surgery in abdomen – Breast Reconstruction – Hypertrophic scar / Keloid management.			
Unit V	Outline principles of plastic surgery – Skin graft / flap – pedicle, tube, muscle flap.			

Text Books:

1. S.DAS – A concise text book of surgery 8th edition 2014

2. Bailey & Love's – Short Practice of Surgery 26th edition 2013

Reference Books:

1.PADMAJA UDHAYAKUMAR – pharmacology for physiotherapy

2.Plastic Surgery Made Easy by Prema Dhanraj

Journal:

1. Journal of surgical research

2. International Research Journal of Pharmacy

Specific Learning Outcomes:

1. Candidate Gains knowledge related to abdominal surgeries on develops employ ability skill.
2. Having learnt on types of Burns, complications shall be able to decide on related role of physiotherapy in deformity prevention and soft tissue tightness with scientific reasoning.
3. With acquired literature evidence from Pharmacology gets familiar with drug role on body functioning enables planning of physiotherapy techniques suitably promoting decision making and abilities.
4. Obtained knowledge on key hole and plastic surgeries helps on to analyse when and where physiotherapy to be used with due learnt evidenced.

SEM IV	(15BPT4MC02) EXERCISE THERAPY II	L	P	T
		60	45	105
Requisite	Basic knowledge of anatomy physiology and biomechanics			
Objective	To become more familiar with exercise related evaluation means. To know importance of posture and home exercises To develop skill and knowledge of joint mobilisation techniques and their applications To obtain details of exercises on various system drug and exercise prescription			
Modules	**CONTENTS**			
Unit I	Evaluation – Joint, Soft tissue, muscles, Nerves - Goniometer			
Unit II	Posture – Suspension therapy – Home Programme – Tele Exercises			
Unit III	Peripheral Joint Mobilization, Techniques, Effects, Care, progression.			
Unit IV	Isokinetic, Isotonic, Isometric, Concentric exercises type its advantages and application, Limitations effects care points. Open and closed kinematic. Strengthening – Techniques, Effects of skeletal muscles, progression, Evaluation.			
Unit V	Physiology effects of exercise on various systems and conditions - Drugs, metabolic disorders – vital signs – Exercise prescription – documentation – Intensity – Frequency – Home programs.			

Text Books:

1.Principles of Exercise Therapy - DENA GARDINER 4th edition2007

2.Therapeutic Exercises - CAROLYN KISHNER 6th edition2012

Reference Books:

1.Margaret Hollis - Practical Exercise Therapy 4th edition 1999

2.Facilitated stretching – Robert E.McAtee, Jeff charland 4th edition 2013

3.PNF in practice - susan s. adler, dominiekbeckers math buck 3rd edition 2008

Journal:

1.Journal of orthopaedic and sports physical therapy

2.Journal of exercise therapy and rehabilitation

Specific Learning Outcomes:

1.Along with basic functioning of human body with various exercise therapy techniques student develop skills with reasoning abilities of greater competency

2.Knowledge related to exercise prescription care clinical condition learnt earlier along with vital signs, learner and rich their employable skills.

3.Get research information on various exercise evaluation prescription and documentation develops efficiency to practice physiotherapy later

4.An analysis of metabolic disorders drugs clinical conditions related to exercise therapy student developed team work importance related to patient health

SEM IV	(15BPT4MC03) MASSAGE THERAPY	L	P	T
		60	45	105
Requisite	Basic knowledge of physics, vital signs human body functioning			
Objective	1. To obtain details on history, techniques, effects of massage on various system. 2. To develop knowledge on application of massage on various part of body. 3. To gain knowledge and skill on massage in various sports conditions. 4. To know on effects of massage in different clinical conditions.			
Modules	**CONTENTS**			
Unit I	History of massage- Definition of massage - Mechanical points to be considered (Manipulation, time of day for treatment, comfort and support of patient-positioning, draping, bolstering, position of operator, using body weight, contact and continuity)- Technique –indication and contraindication- Classification of massage- Based on character of Technique- Stroking manipulation-Pressure manipulation- Vibratory manipulation -Tapotment or Percussion manipulation -Based on depth of tissue reached- (Light massage -Deep massage)- Based on parts of body massaged- (General massage- local massage)-- Based on means of application of pressure-(Manual massage- Mechanical massage)- Physiological effects of massage- various body systems (Effect on- circulatory system, excretory system, muscular system, nervous system, metabolic system, respiratory system, skin, foot massage)			
Unit II	MASSAGE TECHNIQUE -Stroking manipulation- Superficial stroking, deep stroking or Effleurage -Pressure manipulation- Kneading-palmar & digital kneading, ironing –Petrissage-picking up, Wringing, skin rolling -Friction-circular & transverse friction- Percussion manipulation- Clapping, hacking, beating, pounding, tenting- Contact heel percussion- Vibratory manipulation-vibratory& shaking			
Unit III	TECHNIQUES USED FOR VARIOUS PARTS OF BODY - Massage for upper limb-scapular region, shoulder joint, upper arm, elbow joint, Forearm, wrist joint, hand- Massage for lower limb-thigh, knee joint, leg, foot (ankle & toes)- Massage for back-neck and upper back, middle and lower back, gluteal region- Massage for face - Massage for abdomen			
Unit IV	SPORTS MASSAGE -Introduction-role of massage in sports -Massage manipulations stroking,effleurage,petrissage,acupressure,tapotement,Vibration, shaking - Ice massage- Categories of sports massage-pre event massage,			

	intermediate massage, post Event massage	
Unit V	THERAPEUTIC APPLICATION OF MASSAGE -Relaxation -Oedema -Radical mastectomy- Venous ulcer - Painful neuroma - Bells palsy - Sprain and Strain –Fibrositis- TECHNIQUE – EFFECTS ON ORGANS- SWEDISH MASSAGE – AYURVEDIC MASSAGE – AROMA THERAPY	

Text Books:

1.Principles and practice of therapeutic massage –akhourggourangsinha 2nd edition 2010

2.Evidence based therapeutic massage - elizabeth holey, eileen cook 3rd edition 2011

Reference Books:

1.Beards massage. -wood &becker 5th edition 2007

2.Massage for therapist- margaretthollis 3rd edition2099

3.Massage for the Beauty Therapist.- audreygitagoldber 3rd edition 1977

Journal:

1.International Journal of Therapeutic Massage & Bodywork

2.The Massage Therapy Research Network

Specific Learning Outcomes:

1. Learner, expected to have knowledge on various techniques, care, contra indications develops employable skills.
2. Learnt massage therapy can be integrated in various clinical condition with due decision making ability.
3. With limitation, care points having learnt from evidenced research physiotherapy skills and quality.
4. Having acquire massage with its applications promotes inspiring attitude with greater learning on enriched knowledge.

SEM IV	(15BPT4FC01) OBSTETRICS AND GYNAECOLOGY	L	P	T
		45	45	90
Requisite	Should be familiar with reproductive system and their functioning.			
Objective	1. To regain knowledge on Anatomy, Physiology, Genetic related to reproductive system. 2. To gain knowledge on relevant hormones their normal and abnormal values on reproductive system 3. To obtain scientific knowledge related to pregnancy and musculoskeletal changes. 4. To develop various measures of physiotherapy improving fitness related to pregnancy.			
Modules	**CONTENTS**			
Unit I	Review the anatomy of the female pelvis and embryonic and foetal Development, Nutation and counter Nutation			
Unit II	Hormones involved in female reproductive system and its applied aspects.			
Unit III	Outline the physiological skeletal changes during pregnancy, delivery and post-partum period.			
Unit IV	High risk pregnancy and delayed labour, Ante natal exercises, Incontinence.			
Unit V	Post-partum complication and fitness, Post-natal exercises.			

Text Books:

1.PHILIP BENNET CATHERINE WILLIAMSON – basic science in obstetrics and gynecology 4th edition 2010

2.Physiotherapy in Obstetrics and Gynaecology by Jill mantle

Reference Books:

1.Physiotherapy in Obstetrics and Gynaecology (A Comprehensive Book on Women's Health) by Megha Sandeep Sheth M

Journal:

1.International journal of OBG

2.American journal of OBG

Specific Learning Outcomes:

1. Candidate after learning becomes knowledgeable on the role of physiotherapy skills for employ ability related to pregnancy.
2. Gets more familiar for further learning in OBG and develops independent practice skills with Analytical and clinical decision making using relevant literature.
3. Able to treat prevent problems related to pregnancy, Hormonal influence and in continence with confidence any greater competency.
4. As developing core physiotherapy skills related to OBG may become an expert with entrepreneurship in this relevant field can be expected.

SEM IV	(15BPT4AR01) MICROBIOLOGY	L	P	T
		45	30	75
Requisite	Should be familiar with Anatomy, Physiology various medical conditions.			
Objective	1. To obtain knowledge on sterilization, Hypersensitivity 2. To gain details of immunity their influence on health and complications. 3. To become familiar various types of infections, their laboratory findings. 4. to develop detail of bacteria virus immunity related disease and their diagnosis			
Modules	**CONTENTS**			
Unit I	Introduction-Classification- shape and Arrangement-Disinfection and antiseptic - Sterilization and asepsis. - Allergy and hypersensitivity.			
Unit II	Immunology – Definition, antigen, antibody reaction, autoimmunity, natural andAcquired immunity.			
Unit III	Infection – Definition, source of infection, portal of entry, spread of infection, type.			
Unit IV	Bacteriology – Infection caused byGram positive bacteria – clostridium tetani&coryne bacterium diphtheria - Gram negative bacteria – klebsiella, pseudomonas, salmonella, v.cholera- Mycobacterium – M.tuberculosis, M.leprae, atypical mycobacteria -RTI - Meningitis - Enteric infection -Anaerobic infection - UTI - Leprosy, TB-STD - Wound infection- Hospital acquired infection			
Unit V	Viruses – Definition, size, shape, structure, classification, cultivation, diagnosis of viral infection- HIV – Hepatitis-. Polio -Measles -Rubella - Herpes			

Text Books:

1.Text book of microbiology -paniker , ananthanarayanan9th edition 2005

Reference Books:

1.Medical microbiology -parrickR.murraykens.Rosenthal Michael A.pfaller 5th edition 2012.

2.Textbook of microbiology - Surinderkumar 1st edition 2015

Journal:

American society for microbiology

Specific Learning Outcomes:

1.Having a cured knowledge on microbiology related to various laboratory diagnosis for different condition expected to know various procedures for specific bacteria virus in related issue and role of microbiology

2.Likely to know importance of multi discipline teamwork's in healthcare

SEM IV	(15BPT4GE01) KEYHOLE SURGERIES	L	P	T
Requisite	Should be familiar with surgeries in general			
Objective	To become damiliar with ortho, neuro, cardio, sports, general surgery, with keyhole surgeries.			
Modules	**CONTENTS**			
Unit I	Orthopaedic procedures - ACL - Arthroplasty - Arthroscopy			
Unit II	Neuro procedures - DBS - Craniotomy - Investigations			
Unit III	Cardio respiratory- thoracoscopy - bronchoscopy, VAT			
Unit IV	Sports - Meniscectomy - ACL repair - Tendon repair, Rotator cuff			
Unit V	General surgeries - Nephrectomy- Appendicectomy- Gall bladder- Laproscopy			

Text Books:

1.Text Book of practical laparoscopic surgery –Professor R.K

2.Art of laparoscopic surgery Text book and Atlas

Reference Books:

1.keyhole Approaches in Neurosurgery by APerneczky

2.Essentials of Laparoscopy –Prof.Dr.R.K.Mishra

Journal:

1.world journal of laparoscopic surgery

2.journal of laparoendoscopic &Advanced Surgical Techniques

Specific Learning Outcomes:

1. Expected to be familiar with procedure, pre, post impact on functioning of human body related to physiotherapy

2. Gets knowledge in recent trends, evidenced physiotherapy with proper decision making with functional needs of the patient.

3. Prepares for employability and develops team work related abilities

SEM IV	(15BPT4GE02) EAR DISORDERS	L	P	T
Requisite	Familiar with general medicine			
Objective	To develop knowledge on vestibular and vertigo related disorder			
Modules	**CONTENTS**			
Unit I	Headache and dizziness			
Unit II	Vertigo related disorders			
Unit III	Vestibular disorders			
Unit IV	Orthopaedic, neurologic, cardio issues related to ENT			
Unit V	Systemic illness and it's influence on ENT			

Text Books:

1.ENT Infections: An Atlas of Investigation and management

2.Text Book of Ear Nose Throat and Head Neck Surgery, Clinical and practical – P Hazarika.

Reference Books: Clinical and Operative method in ENT and N, Head and Neck surgery systematic approach – Produl Hazarika

Journal:

Indian journal of Otolaryngology and Head and Neck surgery.

American Journal of Otolaryngology

Ear, Nose, Throat journal

Specific Learning Outcomes:

1. After completion of lectures and practical training, is expected to become knowledgeable on vertigo, vestibular disorders, headache with medical systemic, ENT role related to physiotherapy.

2. Prepares analytical ability, reasoning skills learned in their pracice of physiotherapy with ENT related issues.

SEM IV	(15BPT4CT04) CLINICAL TRAINING	L	P	T
Requisite	Willing to apply learned knowledge on real life situations and Patient handling			
Objective	Exposure to hospital environment and understanding the various types of incision and condition related meditation.			
Modules	**CONTENTS**			
Unit I	Clinical Observation for General Surgery Plastic Surgery Department			
Unit II	Laborotary posting for Microbiology, Pharmacology			
Unit III	Field visit, Exercise therapy, Massage			
Unit IV	Community Health Camp			
Unit V	Co-Curricular Activities			

Text Books:

1.Diagnostic process for physiotherapist using manual therapy in clinical practice

2. Clinical case study in physiotherapy

Reference Books:

Text Book of physiotherapy in Surgical condition – Pushpal K Mitra

Journal: 1. International journal of Physiotherapy Research and Clinical practice

2.The journal of clinical Education in physiotherapy

Specific Learning Outcomes: Candidate in IV semester following clinical training should develop knowledge and skills in observation of surgery, surgery impact on health, know the importance of human body functioning with muscles, joints, organs in health and disease status.

SEM V	(15BPT5MC01) ELECTROTHERAPY I	L	P	T
Requisite	Knowledge of Basic Physics, Anatomy, Physiology, Pharmacology patients conditions, Pathology.			
Objective	1) To learn on Indications, Effects of various currents on human body, Limitations and contra indications used for therapy. 2) To know care of patients and equipment's care 3) To familiarise on pain theories related to electrotherapy 4) To learn and obtain practical knowledge related to currents used in physiotherapy 5) To acquire electro diagnosis with ways to do, how to interpret, design treatment and their prognosis with due evaluation. 6) To explain on how Low and medium frequency current machine works, safety devices, ways to check the apparatus, Testing of machine for working condition. 7) To develop skills related to where to apply electrodes, how long therapy to be used, intensity espected outcome of each Electrotherapy procedures. 8) Learn on how to relate Anatomy, Physiology, Medical conditions with Electrotherapy for various clinical scenarios and problems using scientific literature 9) To obtain ways to communicate with patients of how to interpret case sheet, evaluation, therapy. 10) To develop knowledge on hazards, ways to prevent, Record and Act if Electric, Earth shock happens.			
Modules	**CONTENTS**			
Unit I	LF currents -IG, SF Currents, Parameters, Clinical indications- Therapeutic effects.			
Unit II	SD curve- Selection of current- Intensity- Care of equipment- Patients			
Unit III	Pain Gate theories			
Unit IV	IFT , TENS- Dangers- Techniques- Therapeutic -Physiological uses.			
Unit V	Russian currents, Sinusoidal currents.			

Text Books:

1.Clayton's Principles And Practice Of Electrotherapy - Forster And Palastanga - 8th Ed, 2005

2. Textbook Of Electrotherapy - Jagmohan Singh - 2nd Edition 2012

Reference Books:

1.Electrotherapy Evidence Based Practices - Sheila Kitchen – 11th edition 2002.

2.Electrotherapy Explained Principles & Practices – Low & Reed – 4th Edition 2006.

Journal:

1. AMERICAN PHYSICAL THERAPY ASSOCIATION
2. JOURNAL OF ORTHOPAEDIC & SPORTS PHYSICAL THERAPY

Specific Learning Outcomes:

1.Candidate upon learning above course gets employable skills related to Electrodiagnosis and Electrotherapy modalities with due reasoning on various clinical scenarios

2.Further gets familiar with care of patients, equipment's, Dosage, Techniques with Evidence related to electrotherapy practice.

3.Attending above course learner gets familiar with ways and means of preventing hazards related with Electrotherapy like earth shock, Electric shock, burns. Also learns how to seek emergency help including fire extinguisher seek physician help, report the incidents, ensuring safety of patients and equipment with due care and commitment to the society.

4. Expected to do sensory evaluation, contra indications, Indications, Physiological effects following Electrotherapy procedures by integrating previous learnt course knowledge and synthesis for patient benefit including Anatomy, Physiology, Electro physics, Medical conditions.

5. Developed an analytical ability to choose which modality can be beneficial to the needs of the patient with reasoning skills.

6. Having experienced with handling of equipments following clinical, Practical training on during models and patients under supervision got confidence with using equipments, therapy and interacting with patients.

7. Acquired skills in communication ability as Electrotherapy necessitates participatory role by therapist and patient.

SEM V	(15BPT5MC02) CLINICAL ORTHOPAEDICS	L	P	T
Requisite	Basic Knowledge of Anatomy, Physiology, Biomechanics, General Medical conditions, Paediatric and Geriatric conditions.			
Objective	1) Learn on Indications and Contraindications of Orthopaedic Surgery 2) To obtain Knowledge on Fractures, their Management 3) An updated knowledge on Spinal Surgeries, Arthroplasty Procedures in Orthopaedics 4) Gets familiar with orthopaedic care of Amputation and tumours. 5) To observe, learn from orthopaedic experts on conservative and surgical ways of evaluating treating with lectures and on patients with Orthopaedic ailments using literature evidence. 6) To demonstrate on special tests, Investigation, Principles of treating Leprosy, Musculo skeletal ailments, Congenital and degenerative disorders of spine and peripheral joints. 7) To acquire knowledge on application of splints, Traction, Braces, Postoperative care, per operative evaluation of soft tissue injuries, Peripheral Nerve injuries fractures and use due outcome measures of Index, Scales, Scores. 8) To learn on ICF related to Orthopaedic ailments.			
Modules	**CONTENTS**			
Unit I	Indication- Contraindications- Arthroplasty- Arthrodesis- Tendon transfer- Soft tissue lesion			
Unit II	Fracture and Dislocation of spine -Extremities- Skull -Conservative care -Surgery -Investigations			
Unit III	Arthritis -Infections of bone- Joint Tumours -Poliomyelitis- Spinal deformities -Congenital deformities			
Unit IV	Amputations- Pre and post-operative care- Leprosy -Peripheral nerve injuries.			
Unit V	Stem cell therapy- Spinal surgeries – Key hole surgery.			

Text Books:

1.Textbook Of Orthpaedics And Traumatology- Prof. Mayailavahanan Natarajan – 7th Ed, 2011

2.Essential Orthopaedics -J. Maheswari –4th Edition2011

Reference Books:

1.Text Book Of Orthopaedics – John Ebenazer – 2nd Edition 2010

Journal:

1. JOURNAL OF CLINICAL ORTHOPAEDICS & TRAUMA

2. JOURNAL OF CLINICAL & EXPERIMENTAL ORTHOPAEDICS

Specific Learning Outcomes:

1) Candidate gets familiar with various orthopaedic procedures and learns the relevant role of physiotherapy with care of the patient, surgery and scientific reasoning
2) Team work culture along with decision making of various conditions related to physiotherapy makes them for employability.

SEM V	(15BPT5MC04) CLINICAL NEUROLOGY AND NEUROSURGERY	L	P	T
Requisite	Knowledge of Anatomy, Physiology, Biomechanics, General Medical and Surgical procedures			
Objective	1) To get familiar on Neuro Anatomy and Neuro Physiology 2) To learn various Neuro conditions 3) To acquire knowledge of various Neuro surgical procedures 4) To know clinical features, Investigations and Management of Neuro conditions 5) To explain on Neurological evaluation including higher motor functions, Sensory, Motor, Reflex, Bladder, Bowel, Gait and self-care using scales and scores. 6) To elaborate on ICF related to Neurological conditions. 7) To learn on pre-operative evaluation, post-operative care of Neurological conditions like CVA, Cerebral palsy, Infections of brain and spinal cord, Degenerative disorders, MND. 8) To know on recent trends in neurological care and Neuro surgeries.			
Modules	**CONTENTS**			
Unit I	Neuroanatomy -Brain and Spinal cord- Neurophysiology -Tone- Posture -Balance -Movement -Pain.			
Unit II	Clinical features and Management of Cerebral palsy, Spina Bifida, Hydrocephalus- Trauma of Head and Spine, Cerebrovascular Accident.			
Unit III	Demyelinating diseases of spinal cord -clinical features- Investigation Management -Cerebellar lesions- Tumours.			
Unit IV	Infection of Brain and Spinal cord- Diseases of muscle -Peripheral nerve disorders- Degenerative disorders- Epilepsy- Motor neurone disease.			
Unit V	Cranial Nerve Assessment- Higher mental function- Surgeries of Head and Spine.			

Text Books:

1.Neurology and Neurosurgery Illustrated- Kenneth W. Lindsay. Ian Bone - 5th Edition-2011

2. Clinical Neuro Anatomy - Richard .S.Snell`S – 7th Edition 2009

Reference Books:

1.Brain & Bannister Clinical Neurology- Sir Roger Bannister – 7th Edition 1992

2.Principles & Practices Of Medicine - Davidson`S – 22nd Edition 2014

Journal:

1. JOURNAL OF CLINICAL NEUROSCIENCE
2. JOURNAL OF CLINICAL NEUROPHYSIOLOGY

Specific Learning Outcomes:

1) Having completed this course candidate becomes familiar on various Neuro conditions, Neuro surgical procedures along with implications for physiotherapy, thereby employability with analytical ability gets enriched.
2) Gets an insight of other team members role including Neurologist, Neuro surgeon, Anaesthetist, Nurse, Post-operative ICU, thus develops team work culture.

SEM V	NON INVASIVE PROCEDURE (15BPT5FC01)	L	P	T
Requisite	Basic knowledge of Medical, Surgical procedures, Biochemistry, Pathology, Physics.			
Objective	1) To learn various non-invasive procedures 2) To obtain Knowledge on Non – Invasive Orthopaedic, Neuro and Cardiac Procedures 3) To become familiar with Robotic, percutaneous procedures in Gynaecological and Obesity 4) To get insight on benefits, cost, complications of Invasive and Non Invasive Procedures 5) To obtain details of Thermography, Saliva percutaneous procedures, Laparoscopy with their basic indications and relevance to physiotherapy.			
Modules	**CONTENTS**			
Unit I	Investigations - Laboratory –Thermography- Saliva			
Unit II	Non-invasive procedures in Orthopaedic, Neuro, Cardio Respiratory fields			
Unit III	Bariatric surgery, Cranial surgery- Gynaecological- Sports procedures			
Unit IV	Robotic -CT guided procedures –Laproscopy- Percutaneous procedures			
Unit V	Benefits ,Care ,Limitations, Complications, Evidence of Invasive and Non-invasive procedures			

Text Books:

1) Non-Invasive Respiratory Support, Third edition: A Practical HandbookAnita K. Simonds
2) Non-Invasive Brain Stimulation - Aline Iannone

Reference Books:

1) Non-Invasive Brain Stimulation - Aline Iannone
2) Nano Biosensors for Non-Invasive Diagnosis of Cancer - Nidhi Puranik, Shiv Kumar Yadav

Journal:

1) The Journal of Minimally Invasive Surgery
2) Journal of Non Invasive Vascular Investigation

Specific Learning Outcomes:

1) Candidate gets more knowledge to practice independently on various invasive and Non – Invasive procedures with its relevant role for physiotherapy practice with due evidence and learned expected outcome, Limitations and care.
2) Obtained recent trends in Orthopaedic, Neurology, Cardio Respiratory, Gynaecology and Sports with knowledge along with expected role of Physiotherapists has prepared the learner for employability of Global standard.
3) Developed an ability to handle patients with confidence and reasoning of what to do with physio later.

SEM V	MEDICAL TERMINOLOGY AND RECORD KEEPING (15BPT5GE01)	L	P	T
Requisite	Familiar with computer, Case sheets, Clinical training, Documentation.			
Objective	1.To Elaborate on importance of Documentation. 2. To explain of how medical records can be used for Research. 3. To become familiar and use medical terminologies for global standard and uniformity with literature evidence. 4. To learn on ways of maintaining, storing healthcare data of patients, Staff in healthcare and its relevance from exports. 5. To develop updated means of storing datas from sensors and their applications relevance to physiotherapy. 6. To analyse challenges, Barriers, future of documentation in India, globally.			
Modules	**CONTENTS**			
Unit I	Documentation – Manual - Electronic			
Unit II	Electronic health record – Repository of health care data – Patient – Record – Web service			
Unit III	National Language process – Biometric data			
Unit IV	Sensor Data – Wearable personalised health monitoring			
Unit V	Challenges – Future Perspectives – Barriers in Record keeping			

Text Books:

1) Medical Records Organization and Management by GD Mogli
2) Medical Terminology: A Short Courseby Davi-Ellen Chabner

Reference Books:

1) Taber's Cyclopedic Medical Dictionary by Donald Venes
2) Medical Laboratory Science Review by Robert Harr

Journal:

Journal of Clinical Medicine

Sage Journals

Specific Learning Outcomes:

1.Has acquired on importance, Values of Documentation for Research, Medico legal safety for hospital, Clinic, Self and Society.

2. Got familiar with electronic record maintenance, useful for employability related to physiotherapy evaluation, Treatment, Therapy outcomes, Home programme, Safety and untoward incidents reporting and recording, enabled team work, Patient safety and confidentially of Data.

3. Developed standard medical language usage for case sheets, discharge summaries, towards quality of practice.

SEM V	DATA SCIENCE (15BPT5GE02)	L	P	T
Requisite	English, Computer, Applications, Research Attitude			
Objective	1.Understand and Data science related to Physiotherapy 2. To learn on Documentation, Analysis of Data for decision making. 3.To know application of Data for surveillance, Prevention, Design patients care, Utilise for Research. 4. To develop Data for multidisciplinary team care, Protect data with Ethical and confidentiality. 5. To explain how data can be used for care of society, Improve quality of Physiotherapy practice.			
Modules	**CONTENTS**			
Unit I	Data Science in Health care – Benefits – Limitations – Quality of healthcare			
Unit II	Patient Monitoring – Decision Making – Surveillance - Research			
Unit III	Data Science in Hospital – Community – Clinic – Machine learning			
Unit IV	Interdisciplinary Role – Challenges and Opportunities			
Unit V	Consumer – Clinician – Patients – Role – Future perspective			

Text Books:

1) Data Science for Dummies (2nd Edition) by Lillian Pierson
2) Data Science from Scratch by Joel Grus

Reference Books:

1) Build a Career in Data Science, by Emily Robinson and Jacqueline Nolis
2) Introduction to Machine Learning with Python: A Guide for Data Scientists

Journal:

1)Data Science Journal

2)International Journal of Data Science and Analytics

Specific Learning Outcomes:

1.Developed multidisciplinary team skill

2. Learnt use of Data for decision making

3.Acquired Research attitude with critical thinking on preventive care.

4. Developed values in preserving moral ethical values with data with care for society.

5. Integrate data in clinical practice for documentation to improve quality.

SEM V	(15BPT4CT04) CLINICAL TRAINING	L	P	T
Requisite	Willing to apply learned knowledge on real life situations and Patient handling			
Objective	1.Exposure to hospital environment and understanding the various types of incision and condition related Orthopaedic, Neurological conditions. 2. To promote an attitude of Willing to apply learned knowledge on real life situations and Patient handling related to physiotherapy in Orthopaedics, Neurology. 3. To develop knowledge and skills related to conservative, Surgical care by Orthopaedic ailments relevant to physiotherapy during clinical posting. 4. To acquire theoretical and practical skills in Neurological conditions learning evaluation, management of patients and role of physiotherapy their issues and needs			
Modules	**CONTENTS**			
Unit I	Conservative treatment of Orthopedic ailments, Pre and Post-Operative orthopedics, Procedures.			
Unit II	Management of Neurologic conditions, Pre and Post-operative Neurological procedures.			
Unit III	Clinical features, Investigations, Evaluation, Treatment by medication, Surgery, Prognosis of Orthopaedic, Neurologic conditions.			
Unit IV	Community Health Camp – Field visit – Rural Health, scope for Physiotherapy.			
Unit V	Co-Curricular Activities – Health Day, Research relevance to Orthopedic, Neurology to Physiotherapy.			

Text Books:

1.Diagnostic process for physiotherapist using manual therapy in clinical practice

2. Clinical case study in physiotherapy

Reference Books:

Maguey text Book of Orthopaedics Donadilli.

Journal:

1. International journal of Physiotherapy Research and Clinical practice

2.The journal of clinical Education in physiotherapy

Specific Learning Outcomes:

1.Candidate in V semester following clinical training should develop knowledge and skills in observation of surgery, surgery impact on health, know the importance of human body functioning with muscles, joints, organs in health and disease status.

2. Developed ideas on designing physiotherapy techniques learned earlier from Anatomy, Biomechanics, Electro, Exercise therapy on patient specific needs of Orthopaedic, Neurological patients.

3. Having scan evaluation, Treatment of real life patients developed confidence to think, decide on plan of related physiotherapy skills with evidence.

4. Interacted with clinical experts, Patients, Care givers prepared for communication skills, Competence needed for employability.

SEM VI	(15BPT6MC01) ELECTROTHERAPY II	L	P	T
Requisite	Knowledge of Electro physics, Anatomy, Physiology, Clinical conditions, Pharmacology, Pathology.			
Objective	1.To learn on Electro diagnosis with their procedure, Limitations, Reliability. 2. To get familiar with working of high frequency equipment, Parts, Safety devices. 3. To gain knowledge on indications, effects, contra indications, Duration, Intensity, Frequency of SWD, LASER, Ultrasound, Infra-red, Ultra violet paraffin wax, Shockwave therapy, Traction, Dry and Moist heat therapies. 4. To elaborate on sensory evaluation, Vascular conditions, Metals inside tissues, Medications, under lying medical conditions, Procedures that can influence or prevent the usage of electro therapy. 5. To Demonstrate on safety, care of equipment and patients related to superficial and Deep heat electrotherapy. 6. To acquire theoretical and practical skills related to electrotherapy gadgets on dummy models, real patients under supervision using literature support. 7. Learn on how to relate Anatomy, Physiology, Medical conditions with Electrotherapy for various clinical scenarios and problems using scientific literature. 8. To obtain ways to communicate with patients of how to interpret case sheet, evaluation, therapy. 9. To develop knowledge on hazards, ways to prevent, Record and Act if Electric, Earth shock happens.			
Modules	**CONTENTS**			
Unit I	High frequency modalities- Treatment- Care- Dangers- Precautions- Technique			
Unit II	Physiologic and Therapeutic effects, Practice of SWD- MWD, LASER- Ultrasound.			
Unit III	Superficial Heat modalities -Care- Technique -Physiological, Therapeutic effects of IRR, UVR, Paraffin Wax, Moist heat			

Unit IV	Cryotherapy, Traction, Shockwave Therapy	
Unit V	EMG- NCV- Biofeedback- Principles -Uses -Applications	

Text Books:

1.Clayton's Principles and Practice Of Electrotherapy - Forster And Palastanga - 8th Edition 2005

2.Textbook Of Electrotherapy - Jagmohan Singh - 2nd Edition 2012

Reference Books:

1.Electrotherapy Evidence Based Practices - Sheila Kitchen – 11th edition 2002.

2.Electrotherapy Explained Principles & Practices – Low & Reed – 4th Edition 2006.

Journal:

1.AMERICAN PHYSICAL THERAPY ASSOCIATION

2.JOURNAL OF ORTHOPAEDIC & SPORTS PHYSICAL THERAPY

Specific Learning Outcomes:

1.Learnt on application, Effects, Limitations of various electrotherapy equipments developed confidence for employability skills.

2. Got familiar with EMG, LASER, Shock wave therapy, recently used diagnostic and therapeutic machines prepared for entrepreneurship ability of an updated needs of society with due knowledge scientifically.

3. Attending above course learner gets familiar with ways and means of preventing hazards related with Electrotherapy like earth shock, Electric shock, burns. Also learns how to seek emergency help including fire extinguisher seek physician help, report the incidents, ensuring safety of patients and equipment with due care and commitment to the society.

4. Expected to do sensory evaluation, contra indications, Indications, Physiological effects following Electrotherapy procedures by integrating previous learnt course knowledge and synthesis for patient benefit including Anatomy, Physiology, Electro physics, Medical conditions.

5. Developed an analytical ability to choose which modality can be beneficial to the needs of the patient with reasoning skills.

6. Having experienced with handling of equipments following clinical, Practical training on during models and patients under supervision got confidence with using equipments, therapy and interacting with patients.

7. Acquired skills in communication ability as Electrotherapy necessitates participatory role by therapist and patient.

SEM VI	(15BPT6MC02) CLINICAL CARDIOVASCULAR CONDITIONS FOR PHYSIOTHERAPIST	L	P	T
Requisite	Familiar with Anatomy, Physiology, Biochemistry, Pharmacology, Paediatrics, Geriatrics, Pathology, Surgery.			
Objective	1) To learn on Cardiac and Vascular conditions with Epidemiology, Clinical Features, Investigations, Medical, Surgical care, Prognosis. 2) To develop knowledge on Cardiac, Evaluation, Assess,ment, Vital signs, Interventions required, Outcome measures, follow up with literature and clinical patient exposure. 3) To acquire an updated cardiac, surgeries with preoperative, evaluation and treatment, post-operative monitoring by various health care professionals role, outcome measures, follow up.			
Modules	**CONTENTS**			
Unit I	Anatomy -Physiology of Cardiovascular -Blood pressure.			
Unit II	ECG, Echocardiography, Angiogram - Energy expenditure of daily activities- Cardiovascular stress testing.			
Unit III	Clinical features and Management of Carcinoma, Myocardial ischemia, Cyanotic and Acyanotic heart conditions. congenital and acquired heart diseases.			
Unit IV	Thoracic surgery -Cardiac surgery -Open -closed Preoperative evaluation -care.			
Unit V	ICU management care in Ventilator -Suctioning Oxygen therapy.			

Text Books:

1.Cash's Textbook Of Chest , Heart And Vascular Disorders For Physiotherapist - Patricia A. Downie – 4th Edition 1987

2.Tidy's Physiotherapy – Stuart Porter – 15th Edition 2013

Reference Books:

1.Text Book Of Physiotherapy For Cardio Respiration , Cardiac Surgery & Thoracic Surgery Condition –G.S. Madhuri

Journal:

1.INTERNATIONAL JOURNAL OF CLINICAL CARDIOLOGY

Specific Learning Outcomes:

1.Expected to develop knowledge related to medical, surgical management of respiratory conditions and the role of other healthcare professionals.

2.Learn to integrate earlier courses of Anatomy, Physiology, Pathology, Microbiology, Pharmacology, Medicine, Surgery with respiratory conditions and correlate for physiotherapy related scope of practice.

3.Having attended lectures, co-curricular activities, patient exposure, clinical training of ICU, pre and post-operative care of respiratory ailments developed confidence in treating patients and design needed physiotherapy.

4.Got prepared for employability skills of global competency using evidenced learning, Apply required physiotherapy skills only.

SEM VI	(15BPT6MC04) CLINICAL REASONING AND EVIDENCE BASED PHYSIOTHERAPY	L	P	T
Requisite	Knowledge on case sheet reading, observation, evaluation, concepts of medical, surgical, physiotherapy managements.			
Objective	Explain on evidence based practice, with history, benefits, ways to practice, guidelines, challenges related to evidence based physiotherapy. To develop standard measures of pre and post therapy intervention with PICO. To promote communication skills and multidisciplinary interaction in decision making related to patients and physiotherapy practice. To analyse on importance of clinical reasoning of evaluation, selection of therapy, post evaluation, reference for standard of self and quality of profession with examples clinically in real life patients. To get familiar with ICF model To learn on critical thinking skills with reasoning in clinical, research practice from experts, literature, interaction with other professionals to patients functional needs.			
Modules	**CONTENTS**			
Unit I	Evidence based physiotherapy- Definition History of evidence based healthcare in general and physiotherapy in particular. Need for evidence based physiotherapy			
Unit II	Analyse evidence about outcome measure Elements of outcome measure, method of knowing validity and reliability, take out the outline from the studies and method of interacting with other professional and physiotherapist for clinical reasoning and decision making			
Unit III	Evidence Based Physiotherapy and its Implementation Economy, access to the source, population, ethical guideline in physiotherapy, recent clinical guideline for physiotherapy practice, applicability and authenticity of guidelines, clinically appraise them and draw the final conclusion, Knowing the right tract, appropriate time ,population, conditions, continue to provide quality of service			
Unit IV	Clinical reasoning ICF model, Hypothetical model			
Unit V	Clinical decision making			

Text Books:

Evidence based practice – Janet Houser

Evidence based practice in action: Bridging clinical science – Sona Dimidjian

Reference Books:

Practical Evidence-Based Physiotherapy – Robert Herbert

Implementing Evidence based practice in healthcare – Gill Harvey

Journal:

Evidence based practice: Databases and Journals

Evidence based practice Journals

Specific Learning Outcomes:

Developed critical thinking from lectures by experts, analysing real life patients condition, evaluation, management by team of healthcare experts for functional needs of the patients using literature evidence to validate.

Acquired an ability to integrate previous courses learnt from first to fifth semesters, for related patients medical conditions, vital signs, problems identified with physical, laboratory investigations and learnt to design patient specific physiotherapy to improve their functional status.

With clinical training provided from first semester to fifth semester has learnt vital signs, metabolic responses to exercises, ability to use special tests and differentially diagnose using research questions and ways to solve patients individual problems from supportive literature.

Learnt multidisciplinary approach and team behaviour for care of the patient,a needed behaviour for employability.

Familiarised with ICF model, an international classification of function and disability made them with global competency skills.

Clinical decision making an important pillar of quality based practice for assessment, referral, design of therapy, Re evaluation using evidence, candidate has got a research aptitude for growth potential in future.

SEM VI	(15BPT6AR01) COMMUNITY MEDICINE	L	P	T
Requisite	Knowledge on sociology, Psychology, General medicine, Microbiology, Pathology.			
Objective	1.To acquire knowledge on prevention of disease and disability 2. To get familiar with health schemes and their benefits by Government. 3. To familiar with health education and disability benefits. 4. To understand on environmental health and sustainable development Goals. 5. To obtain knowledge on role of International health agencies on health, design modifiable factors of life style disorders related to physiotherapy practice.			
Modules	**CONTENTS**			
Unit I	Health and disease- Factors influencing - Prevention- Diseases with disability.			
Unit II	National Health Scheme- Health Care delivery- ESI- Social Security measures- Occupational Hazards- Prevention -Treatment -Workmen Compensation Act.			
Unit III	Community based-Institution based Rehabilitation- Communicable diseases- Mode of Transmission -Prevention -Non communicable diseases –Epidemiology – Lifestyle disorders.			
Unit IV	Health education -Leaders- Methods -Role in rehabilitation			
Unit V	Health agency National International Environmental Health			

Text Books:

1.Park's Textbook Pf Preventive Medicine And Social Medicine - K.Park – 23rd 2014

2.Textbook Of Community Medicine Preventive And Social Medicine -Sunder Lal Adarsh Pankaj – 2nd Edition 2013

Reference Books:

1.TEXT BOOK OF ENVIRONMENTAL STUDIES BY ERACH BHARUCHA 2nd edition

2.TEXTBOOK ON ENVIRONMENTAL STUDIES BY S. KANAGASABAHI

Journal:

1. INDIAN JOURNAL OF COMMUNITY MEDICINE

2. INTERNATIONAL JOURNAL OF COMMUNITY MEDICINE &

PUBLIC HEALTH

Specific Learning Outcomes:

1.Learnt to function as Healthcare team member in prevention and management of Non-communicable diseases with physiotherapy.

2. Able to integrate previous courses (Sociology, Psychology, Pathology, Microbiology, Medicine) with due betterment of society on improving quality of living.

3.Able to guide patients towards vaccination, disability benefits and legal issues related to occupation and subjects with challenges.

4. An evidenced knowledge of modifiable life style factors using exercises to prevent Non-communicable diseases, with an increased avenue for physiotherapy employability skills.

5. Developed skills to work as a team member in community research projects with an aptitude to serve society.

SEM VI	PROFESSIONALISM AND VALUES	L	P	T
Requisite	Basic knowledge on behaviour, values, communication.			
Objective	To learn on professional values, expected behaviour. To understand importance of Emotions, Moral values. To acquire knowledge related to communication, Integrity,Confidentiality of Patients, Collegues, Care givers information, problems. To use SMART GOALS with reasoning of their practice and ways to develop competency. To develop reflective practice and become accountable.			
Modules	**CONTENTS**			
Unit I	Commitment, Values – Standard of Practice – Moral, Behaviour			
Unit II	Unprofessional behaviour – Emotions, Responsibility, Respect			
Unit III	Communication, Knowledge, Attitude – Technical Skills - Integrity			
Unit IV	Clinical Reasoning – Competency – SMART objectives			
Unit V	Reflective practice – Accountability – Confidentiality - Privacy			

Text Books:

Textbook of Professionalism, Professional Values and Ethics including Bioethics – Sonali Banergee

Reference Books:

Textbook of Professionalism, Professional Values & Ethics – Rohini.T

Essentials of Professionalism, Professional Values & Ethics – Varinder Kaur

Journal:

American journal of critical care

A Brakel – Business Ethics: A European Review

Specific Learning Outcomes:

1) Upon Attending above course candidate, expected to develop professional values, greater competencies, Ethics in Health care especially relevant to Physiotherapy
2) Developed employable and Entrepreneurship skills.
3) Learnt to adapt moral, ethical behaviour and Responsible for their activities with reasoning.
4) Behavioural changes with emotions ,respect others privacy, confidentiality, and value their faith were expected as key outcome of this course.
5) Acquired knowledge on SMART GOALS with reasoning abilities, Anticipated to exhibit Good Professional means.

SEM VI	HEALTHCARE MANAGEMENT	L	P	T
Requisite	English communication ways, Soft skills			
Objective	1) To learn on importance of Goals, ways to achieve personal, professional life 2) To understand importance of Financial plans, sources, ways to improve, barriers. 3)To learn how to communicate with functioning, marketing skills, communicate with healthcare professionals, society. 4) To improve knowledge on legal issues, rights of professionals, conduct of behaviour, recruitment related to clinic, hospital, Academeic, Research Management.			
Modules	**CONTENTS**			
Unit I	Planning – Finance – Vision - Mission			
Unit II	Human Resources – Facilities - Documentation			
Unit III	Marketing - Maintenance			
Unit IV	Recruitment – Coordination of each Department - Research			
Unit V	Newsletter – Communication – Activities of the Institution			

Text Books: Managing health services Understanding public health – Nick Goodwin Management of Healthcare systems – Sonu Goel
Reference Books: Principles and Practice of Management Administration – Jogindra vati Hospital Administration and Management A Comprehensive Guide – Joydeep Das Gupta
Journal: Journal of Healthcare Management Journal of Hospital Management and Health Policy

Specific Learning Outcomes:

Prepared for employability and developed entrepreneurship skills.

Got an insight of human resources, management, legal, ethical issues of health care practice and their finance, marketing skills needed for physiotherapy practice.

Understood the importance of communication

Learnt the importance of goals, planning for personal and professional growth.

SEM VI	(15BPT6CT06) CLINICAL TRAINING	L	P	T
Requisite	Case sheet details, Vital signs, clinical conditions, Physiotherapy Techniques, Modalities.			
Objective	1.To learn on physiotherapy evaluation, ways to write case sheet, based on each patients relevant details. 2. To understand and analyse physical findings, Lab, Radiological Investigations related to physiotherapy practice. 3. To become familiar with application of knowledge with clinical reasoning in selecting specific physiotherapy techniques based on patients needs under supervision. 4. To obtain safety of equipments, Gadgets, patients with their usage and prevention of Hazards in clinical, Hospital practice with related experiences from clinical experts. 5. To develop skills, Confidence in handling of patients following surgeries and select due techniques, learn to work with other health care members. 6. To elaborate on Research with need, Scope, Collection of Data, Consent, Ethical, Moral values to do dissertation.			
Modules	**CONTENTS**			
Unit I	Field visit, Ortho, Neuro, Cardio, Respiratory Department Postings			
Unit II	Visit for Electrotherapy Manufacturing units, Orthotic Engineering			
Unit III	Clinical Training Physiotherapy Department			
Unit IV	Community Health Camps for Community Medicine			
Unit V	Co Curricular Activities			

Text Books:

P.J.Mehta's Practical Medicine by Nihar P Mehta

Manual of prescription writing with case scenarios by Saroj Kothari

Reference Books:

Hutchisons clinical methods An integrated approach to clinical practice – Michael Glynn

Physical Signs, Symptoms, diagnosis and Differential Diagnosis in Clinical Medicine – SN Chugh and Ashima

Journal:

International journal of clinical practice

New England journal of Medicine

Specific Learning Outcomes:

1.Learnt on how to integrate earlier clinical exposures, Courses underwent think analyse for patients relevant problems and design due physiotherapy techniques, prepared for employability.

2. Expected to have developed team work behaviour, ways to communicate with patients, care givers, Team members in a professional way enabled them with soft skills, communication abilities with due respect and human values in their life long practice.

3. Acquired due ethical, Moral conduct with Research knowledge for dissertation related work under supervision, got them with Research aptitude needed for problem solving attitude in physiotherapy practice.

SEM VII	(15BPT7MC01) PHYSIOTHERAPY IN ORTHOPAEDIC CONDITIONS	L	P	T
Requisite	Familiar with Physics, Biomechanics, Exercise therapy, Electrotherapy, Clinical Orthopaedic conditions, Pharmacology, General medicine.			
Objective	1.To understand on physiotherapy assessment, analyse and select patients need based modalities with reasoning abilities of fractures, Soft tissue injuries. 2. To get knowledge and skills related to Pre and Post-operative care of Amputation, Fitting, Training to use prosthesis. 3. To learn on evaluation, Differential diagnosis using special tests, think and design appropriate physio mal therapy modalities for maximum benefit of patients of congenital, Degenerative conditions. 4. To understand the clinical scenarios and refer for orthotic and prosthetic engineers, Orthopaedic surgeon, Occupational therapy for multidisciplinary care. 5. To get familiar with ICF classification of orthopaedic ailments, for updated global practice. 6. To learn on using outcome measures with validated tools, Soap protocols, use reasoning skills with evidence related to orthopaedic physiotherapy.			
Modules	**CONTENTS**			
Unit I	Physiotherapy Assessment, Evaluation, Treatment, Orthoses and prostheses in upper Limb fractures dislocations soft tissue injuries soft tissue lesion deformities and amputation.			
Unit II	Physiotherapy Assessment, Evaluation, Treatment, Orthoses, Prostheses & Assistive devices in lower Limb fractures and Dislocations, Soft tissue injuries, Soft tissue lesions, Deformities and Amputation.			
Unit III	Physiotherapy Assessment, Evaluation, Treatment, Orthoses, Prostheses & Assistive devices in Vertebral Column fractures and Dislocations, Soft tissue injuries, Soft tissue lesions, Deformities and Amputation, Spondylosis, Spondylisthesis, IVDP.			
Unit IV	Physiotherapy Assessment, Evaluation, Treatment, Orthoses, Prostheses & Assistive devices in Congenital and Acquired Infectious diseases, Congenital and Acquired Deformities, Autoimmune diseases.			
Unit V	Physiotherapy Assessment, Evaluation, Treatment, Orthoses, Prostheses & Assistive devices in Neuro Musculo Skeletal disorders.			

Text Books:

1.Essentials of orthopaedics and applied physiotherapy - Jayant Joshi, Prakash Kotwal, 2nd edition, Elsevier, 2011.

2.Essentials of orthopeadics for physiotherapist, John Ebnezer, 2nd edition, 2011.

Reference Books:

1.Principles and Their Applications - Turek's Orthopaedics, 6th revised edition, Lippincott Williams and Wilkins, 2005.

2.Orthopaedic Physical Therapy - Robert A. Donatelli, Churchill livingstone Elsevier, 4 edition 2009.

3.Tidy's physiotherapy – Stuart Porter, 15th edition, Churchill Livingstone Elsevier, 2013.

Journal:

1. JOURNAL OF ORTHOPAEDIC & SPORTS PHYSICAL THERAPY (JOSPT)

2. JOURNAL OF THE AMERICAN PHYSICAL THERAPY ASSOCIATION (APTA)

3.JOURNAL OF PHYSIOTHERAPY AUSTRALIAN PHYSIOTHERAPY ASSOCIATION.

Specific Learning Outcomes:

1.Developed critical thinking of physiotherapy modalities based on patients condition, evaluation, Physical findings, Lab investigations and functional needs and apply for individual subjects.

2. Learnt on integrating Biomechanics, Physics, Medicine, Surgery, Pharmacology, Bio chemistry, Pathology, Micro biology, Exercise, Electrotherapy with Orthopaedic subjects problem and design physical modalities to ensure quality of care with research applications.

3. Learnt team behaviour with role played by related health care professionals.

4. Learnt on importance of Documentation, Ethics, Care, Safety of patients research attitude with reasoning abilities of Global competency.

5.. Prepared for employability with due professional and soft skills related to communication.

SEM VII	(15BPT7MC02) PHYSIOTHERAPY IN NEUROLOGICAL CONDITIONS	L	P	T
Requisite	Knowledge on Anatomy, Physiology, Sociology, Psychology, Medicine, Paediatrics, Geriatrics, Pharmacology, Biochemistry, Neurological conditions.			
Objective	1.To understand an assessment physical evaluation, Laboratory findings, Neurologists, Neuro surgeons prescriptions, Analyse with scope of physiotherapy for Neurological conditions. 2. To learn on clinical reasoning with special test, Evaluation and design physiotherapy based on functional needs of the Neurological patients. 3. To understand on ICF classification, usage of Guidelines for evaluation, outcome measures of validated tools with Research knowledge related to Neuro physiotherapy. 4. To learn to work in a multidisciplinary healthcare model. 5. To adapt National, International societies recent updates related to Neurology, Neuro surgery and related physiotherapy for an updated practice.			
Modules	**CONTENTS**			
Unit I	Physiotherapy Assessment, Evaluation, Treatment, Orthoses, Prostheses & Assistive devices in Central nervous system diseases.			
Unit II	Physiotherapy Assessment, Evaluation, Treatment, Orthoses, Prostheses & Assistive devices in Peripheral Nervous System diseases			
Unit III	Physiotherapy Assessment, Evaluation, Treatment, Orthoses,& Assistive devices in congenital and acquired neurological diseases-ICF			
Unit IV	Physiotherapy Assessment, Evaluation, Treatment, Orthoses, & Assistive devices in Auto Immune diseases, Neuropathies, Myopathies			
Unit V	Physiotherapy Assessment, Evaluation, Treatment, Orthoses, Prostheses & Assistive devices in Congenital, Genetic, Paediatric, Geriatric Neurological conditions.			

Text Books:

1.Cash's Textbook of Neurology for Physiotherapists - Patricia Downie, 4th edition, Jaypee Brothers Publishers, 1993.

2.Adult Hemiplegia: Evaluation & Treatment- Bobath, 3rd edition, Oxford: Butterworth

Heinemann, 1990.

3.Neurological Rehabilitation - Carr and Shepherd, 2nd edition, Oxford: Butterworth Heinemann Elsevier, 2010.

Reference Books:

1.Tetraplegia and Paraplegia: A guide for Physiotherapist – Ida Bromley, 6th edition, Churchill Livingstone,2006.

2.Neurological Physiotherapy: A Problem Solving Approach - Susan Edwards, 2nd edition, Elsevier Churchill Livingstone, 2001.

3. Umphreds Neurological Rehabilitation – Darcy A. Umphred, 6th edition, Elsevier Mosby, 2012.

4.Geriatric Physical Therapy – Andrew A. Guccione, 3rd edition, Elsevier Mosby, 2012.

5.Paediatric Physical Therapy – Jan S. Tecklin, 5th edition, Lippincott Williams & Wilkins, 2014.

Journal:

Journal of Neurosurgery

Journal of Neurosciences

Specific Learning Outcomes:

1.Learnt on employability skills

2. Familiar to work independently and as a team member

3. Able to integrate previous learnt courses and synthesise those knowledge Analyse and apply for subject specific functional needs with due physiotherapy care.

4. Learnt to respect patients safety, Care givers with required knowledge dissemination, Upholds.

5. Able to use global means of evaluation, Techniques, Post evaluation Research based Neuro physiotherapy for quality.

SEM VII	(15BPT7MC03) CLINICAL RESPIRATORY CONDITIONS FOR PHYSIOTHERAPIST	L	P	T
Requisite	Familiar with Anatomy, Physiology, Biochemistry, Pharmacology, Paediatrics, Geriatrics, Pathology, Surgery.			
Objective	4) To learn on Cardiac and Vascular conditions with Epidemiology, Clinical Features, Investigations, Medical, Surgical care, Prognosis. 5) To develop knowledge on Cardiac, Evaluation, Assess,ment, Vital signs, Interventions required, Outcome measures, follow up with literature and clinical patient exposure. 6) To acquire an updated cardiac, surgeries with preoperative, evaluation and treatment, post-operative monitoring by various health care professionals role, outcome measures, follow up.			
Modules	**CONTENTS**			
Unit I	Anatomy -Physiology of respiratory -Bronchopulmonary segments - Conditions of Bony cage- Respiration			
Unit II	Pulmonary function test- Energy expenditure of daily activities- Pulmonary endurance			
Unit III	Clinical features and Management of COPD, Empyema, Asthma, Carcinoma, Infections			
Unit IV	Thoracic surgery- Pneumothorax- Hemothorax- Hydrothorax-Injury of chest wall - Preoperative evaluation -care.			
Unit V	ICU management care in Ventilator -Suctioning Oxygen therapy.			

Text Books:

1.Cash's Textbook Of Chest , Heart And Vascular Disorders For Physiotherapist - Patricia A. Downie – 4th Edition 1987

2.Tidy's Physiotherapy – Stuart Porter – 15th Edition 2013

Reference Books:

1.Text Book Of Physiotherapy For Cardio Respiration , Cardiac Surgery & Thoracic Surgery Condition –G.S. Madhuri 2008

Journal:

1.INTERNATIONAL JOURNAL OF CLINICAL CARDIOLOGY

Specific Learning Outcomes:

1.Expected to develop knowledge related to medical, surgical management of respiratory conditions and the role of other healthcare professionals.

2.Learn to integrate earlier courses of Anatomy, Physiology, Pathology, Microbiology, Pharmacology, Medicine, Surgery with respiratory conditions and correlate for physiotherapy related scope of practice.

3.Having attended lectures, co-curricular activities, patient exposure, clinical training of ICU, pre and post-operative care of respiratory ailments developed confidence in treating patients and design needed physiotherapy.

4.Got prepared for employability skills of global competency using evidenced learning, Apply required physiotherapy skills only.

SEM VII	(15BPT7AR01) RESEARCH METHODOLOGY & BIOSTATISTICS	L	P	T
Requisite	Basic knowledge on Research, and Statistics related to human living			
Objective	1.To understand ethical values in Research related to physiotherapy practice and Publications. 2. To explain on Research question framing, Ways to obtain data, means of doing, evaluation using validated tool, discuss with evidence in physiotherapy. 3. To learn how to work in multidisciplinary research with conduct, Behaviour, Ethics and uphold physiotherapy needs of Research related to society betterment. 4. To get familiar with international guidelines related to research and National guidelines. 5. To become familiar with statistical ways to interpret findings and analyse with literature.			
Modules	**CONTENTS**			
Unit I	Ethics in physiotherapy research – phases of research – conceptual phase – concepts – variables – hypothesis – literature review			
Unit II	Emperical phase – design – survey – validity – data collection – observationsl method- data collection			
Unit III	Observational method- biophysiologic measures – data analysis – descriptive statistics – inferential statistics			
Unit IV	Interpretative phase – critiquing research – guidelines Guidelines for research publication – APA style – plagarism			

Unit V	Physiotherapy Research	

Text Books:

1. Research Methodology and Techniques- C.R. Kothari

2. Research Methods for Clinical Therapist- Carolyn M Hicks

Reference Books:

Essentials of Biostatistics and Research methodology – Indranil Saha

Biostatistics and Research Methodology – G Nageswara Rao

Journal:

The International Journal of Biostatistics

Journal of development Review

Specific Learning Outcomes:

1.Developed employability skills with evidenced practice.

2. Learnt to integrate earlier learnt courses in this programme and later patients functional needs using problem solving skills with due literature evidence.

3. Developed a research attitude for personal, Professional and society enrichment with physiotherapy practice and quality.

4.Able to apply moral financial ethical values, confidentiality details related with research with due responsibility.

5. Learnt to abide by National, International legal issues related to physiotherapy research.

SEM VII	(15BPT7GE01) DIAGNOSTIC IMAGING FOR PHYSIOTHERAPY	L	P	T
Requisite	Familiarity with importance of investigations			
Objective	To learn the basic of CT, MRI and X-ray and relate their findings to scope of physiotherapy. To understand investigations used for soft tissues lesion like ultrasound and Arthrogram and infer their findings to interpret selection of physical agents, expected prognosis of the condition and medical procedure done with. To become familiar with mamography and bone density scan and relate underlying clinical scenario and use safe modalities for patients betterment using clinical evidence.			
Modules	**CONTENTS**			
Unit I	Investigations – CT, NMRI, X-Ray.			
Unit II	Ultrasound, Arthrogram			
Unit III	Thermography, Mammography, Bone Density scan			
Unit IV	PET – SPET – Digital Imaging			
Unit V	Isotope imaging, Fluoroscopy			

Text Books:

1) Diagnostic Imaging for Physical Therapists by MPT Swain, James, Juliette Brosing, Kenneth W. Bush

2) Imaging Handbook for Physical Therapists 1st Editionby Cornwall, Mark W., Elle Nyre, M.D. Harris, John H., Jr.

Reference Books:

1) Diagnostic Imaging 7th Edition Andrea G. Rockall
2) Computational Radiology and Imaging: Therapy and Diagnostics by Christoph Borgers, Frank Natterer

Journal:

1.Journal of Orthopaedics and Sports Physiotherapy

2.Musculoskeletal radiology

Specific Learning Outcomes:

1.Got knowledge of ways to interpret diagnostic imaging and relate to Physiotherapy Practice.

2.Learnt how to integrate imaging results for research related physiotherapy, clinical, dissertation, developed understanding the mechanism of changes in human body with conditions, medications and physiotherapy with due evidence.

3.Able to integrate earlier courses and relates to imaging outcome to improve quality of physiotherapy practice in designing and outcome means.

SEM VII	DIETICS AND NUTRITION	L	P	T
Requisite	Knowledge on physiology, metabolism, physical activities, energy sources.			
Objective	1) To understand the importance of vitamins, minerals related to health and disease. 2) To explain on balanced diet and nutritional requirements deficiency related health disorders and disease with normal abnormal values 3) To demonstrate on nutrition of sports, elder's, obesity, endocrine disorders normal growth and development with ICMR international guidelines 4) To elaborate on measures by government to prevent and promote nutrition related health issues for mother child blindness pregnancy			
Modules	**CONTENTS**			
Unit I	Vitamins on health – Diseases and disorders.			
Unit II	Minerals – Importance on health – Normal values			
Unit III	Balance Diet – Sports – Women elderly.			
Unit IV	Diseases related to mal Nutrition – International Guidelines			
Unit V	Disorders – Preventive means – Supplement.			

Text Books:

1)Dietetics by B Srilakshmi, 7th Edition

2)Nutrition and Dietetics 5th Editionby Shubhangini A Joshi

Reference Books:

1) Textbook Of Nutrition And Dietetics (Ranjana Mahna & Seema Puri Kumud Khanna, Sharda Gupta, Santosh Jain Passi, Rama Seth)
2) CLINICAL DIETITICS 4th ed by Antia F P

Journal:

1) Journal of Dietetics Australia (ISSN 1446 – 6368)

2) Journal of Academy of Nutrition and Dietetics

Specific Learning Outcomes:

1)Learn to integrate diet related conditions with design of physiotherapy and not ethically practice dietary prescription

2)Able to work as a team member with dietitian, nutritional expert, general physician

3)Learnt Multidisciplinary team behaviour with professional boundaries and apply for physiotherapy with reasoning skills of when to refer to dietitian

4)Developed employable skills of the importance on diet and nutrition as basic supply for the metabolism required with physical exercises with sports, lifestyle diseases, elders, women, pregnancy, with potential for future using an analytics approach with evidence.

SEM VII	(15BPT7CT07) CLINICAL TRAINING	L	P	T
Requisite	Case sheet details, Vital signs, clinical conditions, Physiotherapy Techniques, Modalities.			
Objective	1.To learn on physiotherapy evaluation, ways to write case sheet, based on each patients relevant details. 2. To understand and analyse physical findings, Lab, Radiological Investigations related to physiotherapy practice. 3. To become familiar with application of knowledge with clinical reasoning in selecting specific physiotherapy techniques based on patients needs under supervision. 4. To obtain safety of equipments, Gadgets, patients with their usage and prevention of Hazards in clinical, Hospital practice with related experiences from clinical experts. 5. To develop skills, Confidence in handling of patients following surgeries and select due techniques, learn to work with other health care members. 6. To elaborate on Research with need, Scope, Collection of Data, Consent, Ethical, Moral values to do dissertation.			
Modules	**CONTENTS**			
Unit I	Assessment, Writing SOAP notes in Physiotherapy			
Unit II	Clinical training in Physiotherapy Department			
Unit III	Post -operative Physiotherapy training			
Unit IV	ICU posting & Training			
Unit V	Postings for Dissertation Work			

Text Books:

P.J.Mehta's Practical Medicine by Nihar P Mehta

Manual of prescription writing with case scenarios by Saroj Kothari

Reference Books:

Hutchisons clinical methods An integrated approach to clinical practice – Michael Glynn

Physical Signs, Symptoms, diagnosis and Differential Diagnosis in Clinical Medicine – SN Chugh and Ashima

Journal:

International journal of clinical practice

New England journal of Medicine

Specific Learning Outcomes:

1.Learnt on how to integrate earlier clinical exposures, Courses underwent think analyse for patients relevant problems and design due physiotherapy techniques, prepared for employability.

2. Expected to have developed team work behaviour, ways to communicate with patients, care givers, Team members in a professional way enabled them with soft skills, communication abilities with due respect and human values in their life long practice.

3. Acquired due ethical, Moral conduct with Research knowledge for dissertation related work under supervision, got them with Research aptitude needed for problem solving attitude in physiotherapy practice.

SEM VIII	(15BPT8MC01) PHYSIOTHERAPY IN CARDIORESPIRATORY CONDITION	L	P	T
Requisite	Knowledge on anatomy,physiology,medicine, community medicine, pathology, microbiology, surgery,paediatrics,geriatrics.			
Objective	To learn on cardiac conditions based on their causes,clinical features, medical,surgical treatment with lectures and patients. To obtain knowledge on pre,post – operative cardiac conditions using reasoning skills using scientific literatures, lectures, patient exposures. To develop knowledge on Respiratory conditions, conservative and surgical care with their management. To acquire theoretical knowledge of evaluation, design intervention and post evaluation with scales, scores Index. To get familiar with ventilator and related physiotherapy care using evidenced approach To learn on ways manage patient specific goals, objectives, plan of action with physiotherapy of heart, lung transplant patients.			
Modules	**CONTENTS**			
Unit I	Conservative and Post-operative Physiotherapy Assessment, Evaluation, Treatment in Respiratory conditions- Obstructive, Restrictive and Infectious diseases.			
Unit II	Conservative and Post-operative Physiotherapy Assessment, Evaluation, Treatment in Cyanotic and Acyanotic Heart diseases			
Unit III	Conservative and Post-operative Physiotherapy Assessment, Evaluation, Treatment in Intensive Care Units- ICU, CCU, NICU, PICU. Physiotherapy Assessment, Evaluation, Treatment in Respiratory Muscle Paralysis in Neuro & Myopathies/ Spinal Cord lesions.			
Unit IV	Ventilator-Basics, Types, Criteria, Weaning, Physiotherapy Assessment, Evaluation, Treatment for Ventilator assisted patients.			
Unit V	Physiotherapy in special conditions like heart lung transplantation Surgery, etc.			

Text Books:

1.Principles and practice of medicine - Davidson's, 22nd edition, Elsevier, 2014.

2.Cash's textbook of Chest, Heart & Vascular Disorders for Physiotherapist, Patricia A. Downie , 4th edition, Jaypee Brothers Publishers, 1987.

Reference Books:

1.Cardiovascular and Pulmonary Physical Therapy- Donna Frownfelter and Elizabeth Dean, 5th edition, Elsevier, 2012.

2.Tidy's Physiotherapy, Stuart Porter, churchill livingstone, 2013.

Journal:

1. JOURNAL OF PHYSIOTHERAPY & PHYSICAL REHABILITATION.

2. CARDIOPULMONARY PHYSICAL THERAPY JOURNAL (APTA)

Specific Learning Outcomes:

Developed skills in specific physiotherapy assessment, differential diagnosis and design patient specific physiotherapy techniques.

Got confidence in handling patients, ways communicate with care givers, other professionals in ICU ventilator care, pre and post - operative cardiac, Respiratory conditions relevant to the scope of physiotherapy.

Will be able to synthesize earlier learnt courses on Anatomy, Physiology, Exercise therapy, Pharmacology, pathology, Microbiology, Community Medicine, Clinical exposures and relate to specific cardiac, respiratory relevant functional needs of the patient scientific evidence.

Prepared for employability and clinic decision making skills of each patient and acquired behaviour of working independently and as a team member.

SEM VIII	(15BPT8MC02) REHABILITATION MEDICINE INCLUDING GERIATRIC REHABILITATION	L	P	T
Requisite	Knowledge of Anatomy,Physiology, Pharmacology, Biochemistry, Medicine, Surgery, Neurology, Orthopaedics, Cardiorespiratory conditions.			
Objective	To learn on mechanics,causes, theories, concept of pain management techniques with their effects, limitations, contraindications. To obtain knowledge on disability evaluation, their benefits, ICF To develop knowledge related to orthotics, prosthetics, Mobility aids and their needs to patients use. To acquire knowledge and skills of children, elders, neurology, orthopaedic, cardiac, respiratory patients rehabilitation treated conservatively, surgically as a team member using evidenced evaluation. Techniques and post evaluation scores, index which were validated. To gain knowledge, develops ability to think, Analyse and design physiotherapeutic exercises, use assistive devices for subjects with challenges to improve their functions.			
Modules	**CONTENTS**			
Unit I	Therapeutic techniques, Communication problems, Behavioral problems, Treatment of Pain.			
Unit II	Disability evaluation, Evaluation of Physical dysfunction, Pre vocational Evaluation and Placement, Vocational training.			
Unit III	Orthosis, Prosthesis, Mobility AIDS			
Unit IV	Post surgical rehabilitation, Paediatric and Geriatric rehabilitation, Community based Rehabilitation.			
Unit V	Architectural Barrier, Social implication, Legal aspects. Alternative therapy, Audiology, Reiki, Environmental control system.			

Text Books:

1.Textbook Of Rehabilitation - S.Sunder, 2nd edition, Jaypee Brothers Publishers, 2004.

2.Physical Rehabilitation - Susan 'B'. O Sulivan, 6th edition, F.A.Davis Company, 2013.

Reference Books:

Clinical Diagnosis in Physical medicine and Rehabilitation – Subhadra Nori

Manual of Physical Medicine and Rehabilitation – Christopher M.Brammer

Journal:

1. JOURNAL OF REHABILITATION MEDICINE.

2.AMERICAN JOURNAL OF PHYSICAL MEDICINE AND REHABILITATION.

Specific Learning Outcomes:

Expected to develop knowledge related to medical, surgical management of respiratory conditions and the role of other healthcare professionals.

Learnt to integrate earlier courses of Anatomy, Physiology, Pathology, Microbiology, pharmacology, medicine, surgery with respiratory conditions and correlate for physiotherapy related scope of practice.

Having attended lectures, co-curricular activities, patient exposure, clinical training of ICU, pre and post - operative care of respiratory ailments developed confidence in treating patients and design needed physiotherapy.

Got prepared for employability skills of global competency using evidenced learning, apply required physiotherapy skills only.

SEM VIII	(15BPT8MC03) PHYSIOTHERAPY LAW, ETHICS AND MEDICO LEGAL	L	P	T
Requisite	Basic Knowledge in Clinical Practice, Medicolegal issues, ethics.			
Objective	To familiarise with Laws related to Medical, Physiotherapy, practical, and their Consequences. To under importance of consent, ethics, confidentiality with patients, clinical practice and Research. To elaborate on patient centric care with reasoning and consumer protection issues with explaining limitations, effects, cost, care, safety of physiotherapy practice and due documentation. To explain on importance of law abiding, respect human values, rights, negligence, malpractice and clinical decision making with reasoning. To promote communication, soft skills along with legal significance of Moral and Ethical Consequences.			
Modules	**CONTENTS**			
Unit I	Medico-legal application in the standard operating procedures - Ensuring confidentiality in the practice - Patient consent and medical records			
Unit II	Consent to Medical Treatment- Refusal of Medical Treatment- Autonomy - Withholding and Withdrawing Care- Medical Negligence- Patient Confidentiality- Human Rights and Medical Practice- Research and Ethical Approval- Necessary documents in a practice			
Unit III	Ethics in physiotherapy- Scope - Education -Confidentiality -Code of conduct -Legal aspects - Consent - Malpractice -Negligence -Clinical decision- Advertising			
Unit IV	Clinical Establishment Act Standard for Physiotherapy Centre.-The Physiotherapy Central Council Bill, 2017- POSCO Act- The Consumer Protection Act, 1986.- Bio-Medical Waste (Management & Handling) Rules, 1998.- Labor Law Pertaining to Physiotherapist Practitioner- Sexual harassment policy.			

Unit V	Quality of patient service -Patient centric care-Consumer Protection Act	

Text Books:

1. LEGAL& ETHICAL ISSUES FOR HEALTH PROFESSIONS - 3rd Edition 2014

2. ABC OF MEDICAL LAW – WILEY BLACKWELL 2009

Reference Books:

1.Essentials of Ethics, Laws, Professionalism and Management for physiotherapy students.

2.Reflection on Medical Law and Ethics by Sandeepa bhat.

Journal:

1.Archives of Physical Medicine and Rehabilitation

2.Journal of Novel Physiotherapy and Rehabilitation

Specific Learning Outcomes:

Developed Employable skills with research based learning of curriculum, patient exposure with decision making skills with confidence, upholding ethical values.

SEM VIII	(15BPT8GE01) ADMINISTRATION AND TEACHING TECHNOLOGY	L	P	T
Requisite	Familiarity with supervision, discipline, use of ICT			
Objective	To become familiar with laws, regulations of hospitals,clinic, college and responsibilities. To get familiar with ways of communication, soft skills, means of documentation. To develop leadership abilities in supervising and Team work behaviour. To learn and apply teaching and learning theories. To understand importance of learner centric programme, teaching, Evaluation.			
Modules	**CONTENTS**			
Unit I	Human resource management – values – Rights - Responsibilities			
Unit II	Supervision – leadership – stock – Communication – Team work			
Unit III	Components of teaching – Technology theories of learning – ways			
Unit IV	Evaluation of teaching – Learner centric			
Unit V	Communication – Documentation – Appraisal			

Text Books:

1.Pedagogy in Physiotherapy Education by C.S.Ram

2. Instructional technology in Health education and Allied disciplines – Anatome, Joe L.Coeho

Reference Books:

1.Pedagogy and Practice –Cambridge Guide

2.Teaching and Learning in Physical Therapy – Margaret M.Plack

3.Handbook of teaching for Physical therapists – Katerine F.Shepard

Journal:

1.Journal of Physiotherapy Education

2.International Journal of Physiotherapy

Specific Learning Outcomes:

1.Learnt the importance of supervision and became a leader with employability.

2.Able to relate values, rights, responsibilities, of each stalk holder in clinic, Hospital, college, research centres, made them with Team work behaviour and uphold ethical principles.

3.Learnt communication, soft skills made them more competent.

4.Familiarity with Teaching and Learning, ability to use reasoning skills, can become a researcher.

5.Developed confidence to serve the needy of the expected role with values and ethics.

SEM VIII	(15BPT8GE02) QUALITY AND PATIENT SAFETY	L	P	T
Requisite	Familiar with problems of patients, importance of quality of every act as a professional.			
Objective	To understand the importance of global guidelines, evidenced practice related to physiotherapy. Explain importance of an attitude to refer patients and develop as a multidisciplinary professional. Elaborate on the importance of quality of education, clinical practice, research with evaluation and expected outcome with reasoning. To teach on patient centric therapy with awareness, education, getting consent, ways of prevention of illness, human values, integrity, ethics and ways to do. To acquire communication skills, Documentation of events, Medicolegal and learn to ensure quality and safety in practice of physiotherapy.			
Modules	**CONTENTS**			
Unit I	Evidenced practice – Knowledge with updated skill – Global Guidelines.			
Unit II	Referral services – Team work multidisciplinary healthcare			
Unit III	Transparency – Networking – standard of education – Evaluation – Treatment outcome			
Unit IV	Patient education – Awareness – Consent – follow-up – Preventive means			
Unit V	Communication – Documentation – Medico ethics – Legal framework			

Text Books:

Handbook of healthcare quality and patient safety by Giridhar Gyani, Alexander Thomas II ed.

Patient safety and Quality Improvement in Healthcare: A case based approach by Rahul.K Shah

Reference Books:

Quality management of Hospitals – Dr.Farooq A.Jan

Patient safety and Quality care A Handbook of Healthcare Professionals – Chandan Kumar

Journal:

Journal of Health care Quality

BMJ Quality and Safety

Specific Learning Outcomes:

Learnt Global guidelines for evaluation, design and reevaluate prognosis with evidence made them to develop with global employability.

Ability to adapt sustainable development goals like life style modification in physiotherapy practice ensured updated practice and adherence to government regulations.

Expected to have a change in professional behaviour with quality, safety and low abiding professional with ethics and values with patients, care givers,clinic, Hospital and their research.

Developed team work culture among the profession and as multidisciplinary team for quality of physiotherapy care.

Learnt to adapt designing patient centric functional needs with reasoning means ensured of standard of their and profession.

SEM VIII	(15BPT8PJ01) RESEARCH PROJECT AND DISSERTATION	L	P	T
Requisite	Knowledge on statistics, Basic Research, Clinical reasoning.			
Objective	1.To understand Importance of Dissertation and Research related to physiotherapy. 2. To demonstrate on ways to conduct Research and means to evaluate using PICO 3.To become familiar with sources of literature and learn to analyse findings. 4. To learn ways to write an abstract and Guidelines of (International Psychology Association) IPA format Research presentations, findings using literature evidence. 5.To analyse and relate selection of Research topic, Feasibility, Research question, Data collection, Outcome measures and discussion for the benefit of society. 6. To explain on findings of dissertation with Ethics, Scope of physiotherapy and respect international guidelines on code of conduct, Publications, Professional practice.			
Modules	**CONTENTS**			
Unit I	Selection of topic-Importance to society – Profession Aims, Scope			
Unit II	Literature review with an updated relevant to topic, Technique			
Unit III	Ways, Place, Population, Intervention outcome measurement tool			
Unit IV	Ethics, consent – Process Documentation Data collection – Result			
Unit V	Impact on society on outcome of Research – Future perspective			

Text Books:

A Manual for writers of Research papers, Thesis, and Dissertations – Kate L.Turabian

How to write Dissertations and Project Reports – Kathleen McMillan

Reference Books:

Writing a thesis for dissertation Tools for Success – Michael Hammond

Guide to the successful thesis and dissertation – James E.Mauch

Journal:

International Journal of thesis projects and Dissertation

Open access theses and Dissertations

Specific Learning Outcomes:

1.Developed ways, Skills related to Research doing, Documentation recording, Reporting using international guidelines with evidence, thus prepared for employability of global standard.

2. Learnt on how to write reports on Research, Abstract preparation, Proposal for projects made them to develop Research attitude to meet needs of the society.

3. Having prepared, presented their research getting evaluated gave confidence of their practice and related clinical reasoning of their work with greater communication skills.

4. Checked for plagiarism, mal practice by software, Supervisors, ensured of ethical upholding related to research.

SEM VIII	(15BPT8CT08) CLINICAL TRAINING	L	P	T
Requisite	Case sheet details, Vital signs, clinical conditions, Physiotherapy Techniques, Modalities.			
Objective	1.To learn on physiotherapy evaluation, ways to write case sheet, based on each patients relevant details. 2. To understand and analyse physical findings, Lab, Radiological Investigations related to physiotherapy practice. 3. To become familiar with application of knowledge with clinical reasoning in selecting specific physiotherapy techniques based on patients needs under supervision. 4. To obtain safety of equipments, Gadgets, patients with their usage and prevention of Hazards in clinical, Hospital practice with related experiences from clinical experts. 5. To develop skills, Confidence in handling of patients following surgeries and select due techniques, learn to work with other health care members. 6. To elaborate on Research with need, Scope, Collection of Data, Consent, Ethical, Moral values to do dissertation.			
Modules	**CONTENTS**			
Unit I	Assessment, Writing SOAP notes in Physiotherapy			
Unit II	Clinical training g in Physiotherapy Department			
Unit III	Post -operative Physiotherapy training			
Unit IV	ICU posting & Training			
Unit V	Postings for Dissertation Work			

Text Books:

P.J.Mehta's Practical Medicine by Nihar P Mehta

Manual of prescription writing with case scenarios by Saroj Kothari

Reference Books:

Hutchisons clinical methods An integrated approach to clinical practice – Michael Glynn

Physical Signs, Symptoms, diagnosis and Differential Diagnosis in Clinical Medicine – SN Chugh and Ashima

Journal:

International journal of clinical practice

New England journal of Medicine

Specific Learning Outcomes:

1.Learnt on how to integrate earlier clinical exposures, Courses underwent think analyse for patients relevant problems and design due physiotherapy techniques, prepared for employability.

2. Expected to have developed team work behaviour, ways to communicate with patients, care givers, Team members in a professional way enabled them with soft skills, communication abilities with due respect and human values in their life long practice.

3. Acquired due ethical, Moral conduct with Research knowledge for dissertation related work under supervision, got them with Research aptitude needed for problem solving attitude in physiotherapy practice.