MAHATMA GANDHI UNIVERSITY
of
MEDICAL SCIENCES & TECHNOLOGY
JAIPUR

Syllabus

BACHELOR OF PHYSIOTHERAPY (BPT)

(9 Semesters Degree Program including 6 months Rotatory Internship)

2023-24

Recommended by BOS Physiotherapy at its meeting held on 20/04/2023 and approved by Academic Council at its meeting held on 28/04/2023.

NOTICE

1. The university reserves the right to make changes in the syllabus /books/ guidelines, fee-structure or any other information at any time without prior notice the decision of the university shall be binding on all.

2. The jurisdiction of all court cases shall be Jaipur Bench of Hon'ble Rajasthan High Court only.

RULES & REGULATIONS OF

BACHELOR OF PHYSIOTHERAPY (BPT)

PROGRAM CODE: - **BPT23**

9Semesters Degree Program including 6 months Rotatory Internship

1. **Introduction:**

Objectives/aims of the course:

Objective of the Bachelor of Physiotherapy course which is complementary to medicine shall be to allow the students:

I. To acquire adequate knowledge of basic medical subjects and to develop skill and techniques of therapeutic exercises, electrotherapy and soft tissue manipulation so as to work as a rehabilitation team member & can coordinate with other team members to provide physiotherapeutic management of various medical and surgical conditions of patients.
II. Ability to operate as independent practitioners, as well as members of health service provider teams, act as first contact practitioners, from whom patients/clients may seek direct services without referral from another health care professional.
III. To acquire skills in management, research and teaching in physiotherapy as well as guidance and counselling of patients regarding physiotherapy.
IV. To acquire proper attitude for compassion and concerns for patients and welfare of physically handicapped in the community.
V. To practice moral and ethical values and evidence based efficient Physiotherapy treatment of adults as well as pediatric patients/clients with an array of conditions (eg musculoskeletal, neuromuscular, cardiovascular/pulmonary, Sports etc) across the lifespan to all people irrespective of gender, caste, nation, states and territories, region, minority groups or other groups.
VI. Ability to prevent movement dysfunction or maintain/restore optimal function and quality of life in individuals with movement disorders.

PROGRAM OUTCOMES FOR BACHELOR OF PHYSIOTHERAPY PROGRAM

Students who complete 9 semesters undergraduate program in Physiotherapy would earn a Bachelor of Physiotherapy (BPT) degree. The learning outcomes that a student should be able to demonstrate on completion of a degree level program include academic, personal, behavioral, entrepreneurial and social competencies. It is expected that a student completing a particular course must have a level of understanding of the subject and its sub-areas in consonance with the learning outcomes mentioned at the end of that course. Program learning outcomes include Physiotherapy specific skills, generic skills, transferable global skills and competencies that

prepare the student for employment, higher education, and research thereby developing students as contributing members for overall benefit to the society.

2. TITLE OF THE PROGRAM

Bachelor of Physiotherapy (BPT)

3. DURATION OF THE PROGRAM

Duration of the course: 4 ½ Years - 8 semesters, 6 months Internship (9^{th} Semester)

4. MEDIUM OF INSTRUCTION:

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

5. ELIGIBILITY FOR ADMISSION

1. Candidate should have passed 10+2 (12th standard) or equivalent examination with science stream i.e. Physics, Chemistry, Biology and English with 45% marks in the aggregate of all the subjects prescribed for the examination for general and 40% for SC/ST/OBC candidate.

2. Candidate should have completed the minimum age of 17 years as on 31st December of the year of admission to B.P.T. first year course.

3. Every candidate before admission shall furnish a certificate of medical fitness from an authorized Government Medical Officer that the candidate is physically fit to undertake the Physiotherapy course.

4. Selection of the candidate shall be on the basis of merit of 10+2 examination or Joint Entrance Examination conducted by the University.

5. In case of 2 years Diploma Holder of Physiotherapy, candidate will get admission in BPT II year and will complete the BPT course as per MGUMST, Jaipur norms, subject to availability of vacant seat(s).

6. In case of 3 years Diploma Holder of Physiotherapy, candidate will get admission in BPT III year and will complete the BPT course as per the MGUMST, Jaipur norms, subject to availability of vacant seat(s)

6. PROCESS OF ADMISSION:

Admission to Bachelor of Physiotherapy Program shall be made on the basis of written entrance examination conducted for the purpose.

7. RESERVATION POLICY:

Reservation in admissions shall be applicable as per policy of the State Government.

8. ENROLLMENT:

Every candidate who is admitted to Bachelors of Physiotherapy Degree Program in Mahatma Gandhi Physiotherapy College shall be required to get himself/herself enrolled with the Mahatma Gandhi

University of Medical Sciences & Technology (MGUMST) after paying the prescribed eligibility and enrolment fees.

A candidate shall deposit enrolment fees along with tuition fees at the time of his/her admission to the course. Such a candidate who fails to submit, to the college Principal, duly filled enrolment form along with original documents including migration certificate required for enrolment within prescribed period then after he/she shall pay late fee applicable at that time. No student will be allowed to appear in the university examination without his/her enrollment.

9. ATTENDANCE:

Minimum 75 % attendance is required in each year, both for theory and practical classes separately, student with deficient attendance will not be permitted to appear in End of semester examination

10. WORKING DAYS:

Each semester shall consist of not less than 120 working days including examination.

11. CONDUCTION OF THE UNIVERSITY EXAMINATION (END OF SEMESTER EXAMINATION or EOSE):

University semester examination shall be conducted twice in a year with an interval of six months. Even Semester examination shall be conducted after 6 months of odd semester examination

12. ELIGIBILITY TO APPEAR FOR EOSE:

Student is required to have minimum 75% attendance (in theory and practical separately) to make him/her eligible. Candidates failing in one or more subject in a semester will be required to appear in their failing subject in the next examination of the same semester next year.

A candidate will have to clear all the subjects of First to Seventh semester before appearing at eighth semester university examination.

13. APPOINTMENT OF EXAMINER & PAPER SETTER

- All the examiners - Paper setters, Theory examination answer books evaluators, External and internal Examiners for Practical examinations shall be appointed by the president of the University from the panel submitted by HOD/Convener of the respective COC through concerned dean of faculty.
- Paper setters shall be external. He shall also evaluate answers sheets of his paper.

- Practical examiner can be appointed to evaluate answers sheets.
- Eligibility for BPT Examiner and Paper Setter-

    1. MPT possessing Assistant Professor and above.

        OR

    2. Tutor or Demonstrator with at least 3 years of working experience (Academic).

        OR

    3. Physiotherapist with an experience of at least 3 years in a medical college.

14. SCHEME OF EXAMINATION

The University Examination (End of Semester Examination or EOSE) for the Course shall be conducted semester wise at the end of every semester.

I. Theory

(a) There shall be five Theory papers in each semester of the study of study.

(b) Each Theory paper examination shall be of 3 hours duration and of maximum 70 marks.

(c) Internal assessment (Continuous Assessment or CA) shall be of 30 marks for each Theory Paper.

(d) The Paper Setter shall set the questions within the prescribed course of study of the concerned paper. There will be a set pattern of question papers duly approved by Academic Council.

Pattern of question papers (Annexure 1)

(g)Passing Marks: A candidate will have to obtain at least 50% marks including internal assessment in each theory paper to pass.

II. Practical and Viva-Voce Examination

(a) At the end of each semester there shall be practical and viva-voce examination of 100 marks. It shall be conducted after the Theory examination is over. A candidate will have to obtain at least 50% marks in practical and viva-voce examination

(b) University practical and viva-voce examination shall be of 100 marks and internal assessment of thirty marks.

Practical Exam	Semerster	CA (30 marks)	EoSE (70 Marks)	Passing Marks	Practical Examiners
Case Demonstration on Patient / Model	Semester I to VIII	10	20	50 % aggregate including continuous assessment	One Internal & One External Examiner
Practical Record Book + Seminar Presentation		10	20		
Viva		10	30		
Total Marks		**100**			

III Result

1. A candidate will have to obtain at least 50% marks separately in each Theory paper including internal assessment and a minimum of 50% marks in the practical examination including viva-voce for him to be declared pass.
2. A Candidate who has failed in a Papers (s) will reappear in respective paper(s) in next examination of the same semester next year.
3. Candidate who has failed in Practical examination will reappear in practical examination only in next practical examination of the same semester.

IV. Supplementary/Remanded Examination

(a) A supplementary examination shall be conducted preferably within 45 days of the declaration of the result of seventh semester main examination. All the candidates having back papers of first, second, third, fourth, fifth, sixth, and seventh semester examination will be allowed to appear at this supplementary examination. Candidates passing all the papers (theory as well as practical) of first, second, third, fourth, fifth, sixth, and seventh semester examination will be allowed to appear at the eighth semester university examination, if otherwise eligible.

(b) A supplementary examination shall be conducted preferably within 45 days of the declaration of the result of eighth semester main examination. All the candidates having back papers of only eighth semester examination will be allowed to appear at this supplementary examination.

(c) Internal assessment marks obtained in main examination in the concerned failed paper(s)/practical shall be carried forward for working out the result of next

Theory paper(s) and/or practical examination.

(d) A failing candidate, if opt for improvement of his/her internal assessment marks shall be allow to do so. In case he does appear for improvement or gets lesser marks in internal assessment, his earlier marks will be considered for working out the result of the failing subject.

V. Promotion to Next Semester

1. The minimum required aggregate attendance for appearing at the EoSE/promotion to next higher semester shall be 75%
2. A candidate who has passed or failed in one or more subjects shall be promoted to respective next semester, subject to fulfilment of other eligibility criteria.
3. A candidate will be allowed to appear for the VIII semester examination only when the backlog of all papers (theory papers and practical) of I semester to VII semester exams including elective papers (if any) is cleared.
4. The student is required to clear all the University examination within 8 years from the joining of the course otherwise he/she will not to be allowed to join internship program and he/she will have to leave the course.
5. Students failing to meet the minimum aggregate attendance requirement in a semester will not be promoted to the next semester, regardless of other academic performance. They will have to repeat with next year batch.

Bachelors of Physiotherapy (BPT) Marks Distribution of Semester – I Examination

Course/Paper Name	**Course/Paper Code**	**Credits**	**Theory/ Practical/Viva**			
CORE COURSES			**EOSE**	**CA**	**Total**	**Pass Marks**
Human Anatomy- I	BPT23S101T	4	70	30	100	50 % aggregate including continuous assessment marks separately in theory and practical.
Human Physiology-I	BPT23S102T	4	70	30	100	
Basics of Exercise Therapy I & Orientation to Physiotherapy	BPT23S103T	4	70	30	100	
Basics of Electrotherapy I Theory	BPT23S104T	4	70	30	100	
ELECTIVE COURSES (ANY ONE)						
English & Communication Skills	BPT23S105T	2	70	30	100	

Basic Yoga Practices	BPT23S106T	2	70	30	100	
PRACTICAL COURSE						
Human Anatomy- I	BPT23S101P	2	70	30	100	
Human Physiology-I	BPT23S102P	2	70	30	100	
Basics of Exercise Therapy I	BPT23S103P	2	70	30	100	
Basics of Electrotherapy I	BPT23S104P	2	70	30	100	
TOTAL	**09 (05 Theory Paper 04 Practical)**	26	630	270	900	

Bachelors of Physiotherapy (BPT) Marks Distribution of Semester-II Examination

Course/Paper Name	**Course/Paper Code**	**Credits**	**Theory/ Practical/Viva**			
CORE COURSES			**EOSE**	**CA**	**Total**	**Pass Marks**
Human Anatomy- II	BPT23S201T	4	70	30	100	50 % aggregate including continuous assessment marks separately in theory and practical.
Human Physiology-II	BPT23S202T	4	70	30	100	
Basics of Exercise Therapy II	BPT23S203T	4	70	30	100	
Basics of Electrotherapy II Theory	BPT23S204T	4	70	30	100	
ELECTIVE COURSES (ANY ONE)						
Biochemistry	BPT23S205T	2	70	30	100	

Environmental Science	BPT23S206T	2	70	30	100	
PRACTICAL COURSE						
Human Anatomy- II	BPT23S201P	2	70	30	100	
Human Physiology-II	BPT23S202P	2	70	30	100	
Basics of Exercise Therapy II	BPT23S203P	2	70	30	100	
Basics of Electrotherapy II	BPT23S204P	2	70	30	100	
TOTAL	**08 (05 Theory Paper 03 Practical)**	26	630	270	900	

Bachelors of Physiotherapy (BPT) Marks Distribution of Semester-III Examination

Course/Paper Name	**Course/Paper Code**	**Credits**	**Theory/ Practical/Viva**			
CORE COURSES			**EoSE**	**CA**	**Total**	**Pass Marks**
Exercise Therapy I	BPT23S301T	4	70	30	100	50 % aggregate including continuous assessment marks separately in theory and
Electrotherapy I	BPT23S302T	4	70	30	100	
Biomechanics & Kinesiology I	BPT23S303T	4	70	30	100	
Pathology	BPT23S304T	4	70	30	100	
ELECTIVE COURSES (ANY ONE)						

Myofascial Release Technique	BPT23S305T	2	70	30	100	practical.
Microbiology	BPT23S306T	2	70	30	100	
PRACTICAL COURSE						
Exercise Therapy I	BPT23S301P	2	70	30	100	
Electrotherapy I	BPT23S302P	2	70	30	100	
Supervised Physiotherapy Clinical Training		4	-	-	-	
TOTAL	**07 (05 Theory Paper 02 Practical)**	26	490	210	**700**	

Bachelors of Physiotherapy (BPT) Marks Distribution of Semester-IV Examination

Course/Paper Name	**Course/Paper Code**	**Credits**	**Theory/ Practical/Viva**			
CORE COURSES			**EoSE**	**CA**	**Total**	**Pass Marks**
Exercise Therapy II	BPT23S401T	4	70	30	100	50 % aggregate including continuous assessment marks separately in theory and practical.
Electrotherapy II	BPT23S402T	4	70	30	100	
Biomechanics & Kinesiology II	BPT23S403T	4	70	30	100	
Pharmacology	BPT23S404T	4	70	30	100	
ELECTIVE COURSES (ANY ONE)						

Splinting & Bracing	BPT23S405T	2	70	30	100	
Community Medicine	BPT23S406T	2	70	30	100	
PRACTICAL COURSE						
Exercise Therapy II	BPT23S401P	2	70	30	100	
Electrotherapy II	BPT23S402P	2	70	30	100	
Supervised Physiotherapy Clinical Training		4	-	-	-	
TOTAL	**07** **(05 Theory Paper 02 Practical)**	26	490	210	**700**	

Bachelors of Physiotherapy (BPT) Marks Distribution of Semester-V Examination

Course/Paper Name	**Course/Paper Code**	**Credits**	**Theory/ Practical/Viva**			
CORE COURSES			**EoSE**	**CA**	**Total**	**Pass Marks**
Clinical Orthopedics I	BPT23S501T	4	70	30	100	50 % aggregate including continuous assessment marks separately
Physiotherapy in Orthopedic Conditions I	BPT23S502T	4	70	30	100	
General Medicine	BPT23S503T	4	70	30	100	

Disability Prevention & Rehabilitation I	BPT23S504T	4	70	30	100	in theory and practical.
ELECTIVE COURSES (ANY ONE)						
Hand rehabilitation	BPT23S505T	2	70	30	100	
Sociology (CT)	BPT23S506T	2	70	30	100	
PRACTICAL COURSE						
Clinical Orthopedics I	BPT23S501P	2	70	30	100	
Physiotherapy in Orthopedic Conditions I	BPT23S502P	2	70	30	100	
Supervised Physiotherapy Clinical Training		4	-	-	-	
TOTAL	**07 (05 Theory Paper 02 Practical)**	26	490	210	**700**	

Bachelors of Physiotherapy (BPT) Marks Distribution of Semester-VI Examination

Course/Paper Name	**Course/Paper Code**	**Credits**	**Theory/ Practical/Viva**			
CORE COURSES			**EoSE**	**CA**	**Total**	**Pass Marks**
Clinical Orthopedics II	BPT23S601T	4	70	30	100	50 % aggregate including continuous assessment
Physiotherapy in Orthopedic Conditions II	BPT23S602T	4	70	30	100	

Pediatrics	BPT23S603T	4	70	30	100	marks separately in theory and practical.
Disability Prevention & Rehabilitation II	BPT23S604T	4	70	30	100	
ELECTIVE COURSES (ANY ONE)						
Vestibular rehabilitation	BPT23S605T	2	70	30	100	
Psychology & Psychiatry	BPT23S606T	2	70	30	100	
PRACTICAL COURSE						
Clinical Orthopedics II	BPT23S601P	2	70	30	100	
Physiotherapy in Orthopedic Conditions II	BPT23S602P	2	70	30	100	
Supervised Physiotherapy Clinical Training		4				
TOTAL	**07 (05 Theory Paper 02 Practical)**	26	490	210	**700**	

Bachelors of Physiotherapy (BPT) Marks Distribution of Semester-VII Examination

Course/Paper Name	**Course/Paper Code**	**Credits**	**Theory/ Practical/Viva**			
CORE COURSES			**EoSE**	**CA**	**Total**	**Pass Marks**
Neurology & Neurosurgery	BPT23S701T	3	70	30	100	50 %

Physiotherapy in Neurological & Neurosurgical Conditions I	BPT23S702T	3	70	30	100	aggregate including continuous assessment marks separately in theory and practical.
Physiotherapy in Medical Conditions	BPT23S703T	3	70	30	100	
Exercise Physiology & Sports Physiotherapy I	BPT23S704T	3	70	30	100	
ELECTIVE COURSES (ANY ONE)						
Basic Life Support	BPT23S705T	2	70	30	100	
Neurodevelopmental Techniques	BPT23S706T	2	70	30	100	
PRACTICAL COURSE						
Physiotherapy in Neurological & Neurosurgical Conditions I	BPT23S701P	3	70	30	100	
Physiotherapy in Medical Conditions	BPT23S702P	3	70	30	100	
Supervised Physiotherapy Clinical Training		6	-	-	-	
TOTAL	**07 (05 Theory Paper 02 Practical)**	26	490	210	**700**	

Bachelors of Physiotherapy (BPT) Marks Distribution of Semester-VIII Examination

Course/Paper Name	**Course/Paper Code**	**Credits**	**Theory/ Practical/Viva**			
CORE COURSES			**EoSE**	**CA**	**Total**	**Pass Marks**
General Surgery	BPT23S801T	3	70	30	100	50 %

Physiotherapy in Neurological & Neurosurgical Conditions II	BPT23S802T	3	70	30	100	aggregate including continuous assessment marks separately in theory and practical.
Physiotherapy in surgical Conditions	BPT23S803T	3	70	30	100	
Exercise Physiology & Sports Physiotherapy II	BPT23S804T	3	70	30	100	
ELECTIVE COURSES (ANY ONE)						
Plastic Surgery and Cardiothoracic Surgery	BPT23S805T	2	70	30	100	
Information and Communication Technology in Health Education	BPT23S806T	2	70	30	100	
PRACTICAL COURSE						
Physiotherapy in Neurological & Neurosurgical Conditions II	BPT23S802P	3	70	30	100	
Physiotherapy in surgical Conditions	BPT23S803P	3	70	30	100	
Supervised Physiotherapy Clinical Training		6	-	-	-	
TOTAL	**07 (05 Theory Paper 02 Practical)**	26	490	210	700	

15. REVALUATION / SCRUTINY:

Revaluation of answer book(s) and scrutiny of the marks shall be permissible as per the policy of the university.

16. TEACHING HOURS:

Teaching hours shall be not less than 400 hours in every semester.

17. AWARD OF DEGREE:

The degree shall be awarded by the University only after receipt of Course completion certificate and NO dues from the Head of Institution. (Dean/Principal of the college).

18.LETTER GRADES AND GRADE POINTS

LETTER GRADE	GRADE	PERCENTAGE OF MARKS
O (Outstanding)	10	100 %
A+(Excellent)	9	90-99.99 %
A (Very Good)	8	80-89.99 %
B+(Good)	7	70-79.99 %
B (Above Average)	6	60-69.99 %
C(Average)	5	50-59.99 %
F(Fail)	0	0 Less than 50 %
Ab (Absent)	0	0 Absent

19.Grades Qualifying for Pass: Theory and Practical Examination

1. Minimum 5 Grade in the university examination and **5 Grade** in internal assessment evaluated by the department are required to pass **who fails to obtain 5 Grade shall be declared failed.**

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

3. Letter Grade **Ab (Absent)** will be showing the absent of the candidate in examination and will be required to reappear in the examination.

Internal Assessment/ Continuous Assessment

Internal assessments will be conducted two times in a semester. Internal assessments will consist of departmental examinations, assignments, departmental posting, and evaluations. The objective is to allow students to have hands on experience.

End of Semester Evaluation (EoSE) examination

a. Each theory paper examination shall be of 3 hours duration.

b. There will be Five papers of theory in Each Semester as following-

20. CREDIT WEIGHTAGE DISTRIBUTION (%)

Item	Credit Weight (%)
1.Continue Assessment	**30 %**
2.End of Semester Examination	**70 %**
Total	**100%**

21.Authority to issue transcript

The Controller of Examination of the University shall be the authority for issuing transcript after receiving the described fee from the candidate.

22.Working Hours/Days

Duration	**4 $^{1/2}$ Years (8 Semesters + 1 semester Internship)**
Working Days	6 Days in A Week
Working Hours	36 Hours in A Week

23.Distribution of Courses

Semester	**Core Course Component (CCC)**	**Elective Course Component (ECC)**	**Core Practical**	**Total no.of Courses**

Semester-1	**4**	**1**	**4**	**9**
Semester-2	**4**	**1**	**3**	**8**
Semester-3	**4**	**1**	**2**	**7**
Semester-4	**4**	**1**	**2**	**7**
Semester-5	**4**	**1**	**2**	**7**
Semester-6	**4**	**1**	**2**	**7**
Semester-7	**4**	**1**	**2**	**7**
Semester-8	**4**	**1**	**2**	**7**
Semester-9	**INTERNSHIP**			
Total	**32**	**8**	**19**	**59**

4BPT - Internship - 24 weeks /42 hours per week supervised clinical practice			
Course Description	**Clinical Postings**	**Credits**	**Hours**
Core Clinical Training	**Musculoskeletal PT**	**4**	**180**
Core Clinical Training	**Cardiovascular and Pulmonary PT**	**4**	**180**
Core Clinical Training	**Neuro physiotherapy**	**4**	**180**
Core Clinical Training	**Community Based Clinical Training**	**4**	**180**
Core Clinical Training	**Intensive Care Unit**	**4**	**180**
Research	**Research Project**	**2**	**108**

*According to NEP Rules– 1 Credit of Internship = 45 HOURS OF Internship.

24.Distribution of Courses in each semester-

Sr. No.	Type of Course	Numbers
1	**Core Course**	**4**
2	**Elective Course**	**1**
Total		**05 (Five)**

25. Types of Courses in Bachelor of Physiotherapy: -

1. Core Course- Course designed under this category aim to cover the basics that a student is expected to imbibe in the discipline of Bachelor of Physiotherapy. A course, which should compulsorily be studied by a candidate as a core requirement is termed as a Core course.

2. Elective Course-It is a course which can be chosen from a pool of courses it is specific or specialized or advanced or supportive to the discipline of Bachelor of Physiotherapy. Students have to **CHOOSE ANY ONE COURSE IN EACH SEMSTER** from the pool of course given to that semester.

3.**Practical/AECC/SEC:** Core Course practical are the courses, which should compulsorily be studied by a candidate as a core requirements aim to cover the basics that a student is expected to

imbibe in the discipline of Bachelor of Physiotherapy leading to Knowledge enhancement. These are skill-based and are aimed at providing hands-on-training, competencies, skills, etc.

Computation of SGPA and CGPA

The UGC recommends the following procedure to compute the Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA):

i. 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 $(Si) = \sum(C_i \times G_i) / \sum C_i$

where C_i is the number of credits of the ith course and G_i is the grade point scored by the student in the ith course.

ii. 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 program, i.e.

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

where Si is the SGPA of the 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**	**Grade letter**	**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**

ii. ***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**		
Credit : 26 SGPA:6.3	Credit : 25 SGPA: 8.0		

Thus, **CGPA =** 20 x 6.9 + 22 x 7.8 + 25 x 5.6 + 26 x 6.0 + 26 x 6.3 + 25 x 8.0

= **6.73**

Name of the Program- Bachelors in Physiotherapy

Placement of Course – BPT Semester I

Name of the Course	**Human Anatomy- I Theory**
Course Code	**BPT23S101T**
Course Description	**Core Theory**
Credit per Semester	**4 credits**
Hours per Semester	**60 hours**

Course Learning Outcomes: The student will be able to	
CO 1	Explain about anatomical aspects of muscles, bones, joints, their attachments of thorax and upper quadrant & to understand and discuss analysis of movements with respect to bones, joints and soft tissues related to musculoskeletal system of thorax, & upper extremity.
CO 2	Explain about structures of the cardio vascular & respiratory system, mechanism of respiration and the course of blood vessels, structure of rib cage & its contents with special emphasis to lungs, tracheo-bronchial tree, respiratory muscles & heart.
CO 3	Explain about source & course of major arterial, venous & lymphatic system, related to upper quadrant, thorax and heart.
CO 4	Demonstrate movements of lower extremity joints – Identify & describe the origin/insertion, nerve /blood supply, root value & function of various skeletal muscles (including lower extremity and spine)

Course Content

1. General Anatomy:

1. Cell: Parts, Name of Cytoplasmic organelles and inclusion with their Functions.

2. Epithelium: Types with examples and light microscopic structure.

3. Connective Tissue: Classification with emphasis to tendon and ligament.

4. Cartilage: Types with example.

5. Bone: Types with example, types of Ossification (Stage of Ossification not required).

6. Joints: Classification with example, emphasis to synovial joints.

7. Muscles: Types (details of EM picture not required).

8. Nervous tissue: Structure of a Neuron, Synapse Reflex arc, Degeneration and Regeneration of the Nerve, typical spinal nerve.

9. Embryology

(a) Ovum, Spermatozoa, fertilization and formation of germ layers and their derivations.

(b) Development of skin, fascia, blood vessels, lymphatic.

(c) Development of bones, axial and appendicular skeleton and muscles.

(d) Neural tube, development of spinal cord, Brain stem and brain (cerebrum, cerebellum)

2. Regional Anatomy

Superior Extremity

(1) Pectoral region, Axilla, Brachial plexus, muscles of arm (front & back), muscles of forearm (front & back) palm (muscle, nerve, vessels) Synovial Bursae of hand and palmar spaces, nerves (axillary, median, ulnar, radial), Cutaneous distribution according to dermatomes, Related Clinical anatomy.

(2) Joints: Shoulder girdle, shoulder, elbow, radial-ulnar, wrist, first carpo-metacarpal joints.

Inferior Extremity

(1) Front of thigh, femoral triangle, lumber plexus, lnguinal group of lymph Nodes, glutal region, back of thigh, leg (anterior, lateral, posterior compartments) foot (dorsum, plantar), Venous drainage of inferior Extremity, Nerve and their distribution (femoral, sciatic, tibial, common peroneal, obturator), Arches of foot, Cutaneous distribution according to dermatomes, Related clinical Anatomy.

(2) Joint, hip, knee, ankle, sub-talar & mid-tarsal joints.

3. Thorax

Thoracic wall, typical intercostals space, Mediastinum (boundaries, contents), Heart with its internal and external features, Blood vessels, Typical spinal Nerve, movement of ribs during Respiration, pleura, lungs.

Name of the Program- Bachelors in Physiotherapy

Placement of Course – BPT Semester I

Name of the Course	**Human Physiology- I Theory**
Course Code	**BPT23S102T**
Course Description	**Core Theory**
Credit per Semester	**4 credits**
Hours per Semester	**60 hours**

Course Learning Outcomes: The student will be able to	
CO 1	Explain about relative contribution of each organ system in maintenance of the Milieu Interior (Homeostasis)
CO 2	Explain about physiological functions of various systems, with special reference to Musculo-skeletal, Neuro-motor, Cardio-respiratory and Nervous system, & neuromotor alterations in function with aging.
CO 3	Acquire the skill of basic clinical examination, with special emphasis to Cardiovascular & Respiratory system
CO 4	analyze physiological response & adaptation to environmental stresses-with special emphasis on physical activity, altitude, temperature
CO 5	demonstrate basic clinical examination, with special emphasis to special senses, sensations, reflex testing, Exercise tolerance / Ergography.

Course Content

1. General Physiology

1. Introduction and scope of Physiology

2. Cell and tissue-Its structure, Principal constituents, properties and functions including cell division.

3. Body Fluid.

(a) Blood: Composition and general functions of plasma. Blood cells – structure and function - Red Blood cells, white Blood Cells – including numbers and approximate length of life – position, structure and function of cells of Reticulo endothelial system.

(b) Blood clotting including bleeding time and clotting time, factors accelerating or slowing the process. Blood groups and their significance, Rh-factor, Hemoglobin and E.S.R.

(c) Formation of Blood, tissue fluid and lymph.

2. Cardio-Vascular System. (Detailed)

1. Structure and properties of Heart Muscles and nerve supply of Heart.

2. Structure and functions of arteries, capillaries and veins.

3. Cardiac cycle and Heart sound.

4. Cardiac output measurements, factors affecting Heart Rate and its regulation

5. Cardio-vascular reflexes.

6. Blood pressure, its regulation, physiological variation, peripheral resistance, Factors Controlling Blood Pressure, Hemorrhage.

7. ECG study and stress test

3. Respiratory System. (Detailed)

1. Mechanism of Respiration, Changes in diameter of thorax, Intra-pleural and Intrapulmonary pressure.
2. Quantities of lung volume, tidal and residual volume, vital capacity.

3. Gaseous inter-changes in lung and tissues.

4. Control of respiration-Nervous and chemical significance of changes in rate and depth, transportation of oxygen and carbon dioxide.

5. Respiratory states-anoxia, asphyxia, Cyanosis, Acclimatization.

4. Neuromuscular Physiology (Detailed)

1. Cell membrane – Ionic and Potential gradient and transport.

2. Muscle – Types of muscular tissue – Gross and Microscopic structure – function. Basis of muscle contraction – changes in muscle contraction, Electrical – Biphasic and mono-phasic action potentials, chemical, Thermal and physical changes, Isometric and Isotonic contraction.

3. Motor units and its properties – clonus, tetanus, all or none law, Fatigue.

4. Nerve – Gross and microscopic structure of nervous tissue, one neuron – Generation of action potential – Nerve impulse condition.

5. Neuromuscular junction.

6. Degeneration – Regeneration of peripheral nerves, electro tonus and Pfluger's law. Types and properties of receptors, types of sensations, synapse, reflex arc, its properties - occlusion, summation, sub minimal fatigue etc.

7. Tracts – Ascending and descending and extra-pyramidal tracts.

8. Functions of E.E.G., Cerebral cortex, cerebrum, cerebellum, Basal ganglia.

9. Thalamus & Hythalamus – connection and functions.

10. Reticular formation – tone posture & equilibrium, Autonomic nervous system.

5. Special Senses:-

1. Eye-Errors of refraction, equilibrium, Autonomic nervous system.

2. Speech and its disorders.

3. Ear and Vestibular apparatus, taste, olfactory, somatic sensations.

Name of the Program- Bachelors in Physiotherapy

Placement of Course – BPT Semester I

Name of the Course	**Basics of Exercise Therapy I Theory & Orientation to Physiotherapy**
Course Code	**BPT23S103T**
Course Description	**Core Theory**
Credit per Semester	**4 credits**
Hours per Semester	**60 hours**

Course Learning Outcomes: The student will be able to	
CO 1	Explain about the principles of exercise therapy.
CO 2	Explain about the classification of movements in detail.
CO 3	Gain the basic knowledge of classification of relaxed passive movements, definition, technique, effects and uses of relaxed passive movement.

Course Content

1. Basic physics in exercise therapy. Mechanics: Force, Gravity, line of gravity, center of gravity in human body, Base, equilibrium, Axes and Planes, mechanical principles of lever, examples in human body, pendulum, spring.

2. Introduction to exercise therapy.

3. Muscle strength: Anatomy and physiology of muscle tissue, causes of muscle weakness paralysis, prevention of muscle weakness/paralysis, Type of muscle work and contraction ranges of muscle work, prevention of muscle atrophy.

4. Muscle assessment- M.R.C. grading, Principles of muscle strengthening/re-education, early re-education of a paralyzed muscle.

5. Classification movements in details:

6. Voluntary movement: free exercise, assisted exercises, resisted exercise, Active-Assisted and Resisted exercise. Assisted Exercises: Technique and uses. Free exercises-Classification, technique, effects of frequent exercises on various systems etc

7. Starting position-Fundamental starting position-standing, sitting, kneeling, lying and hanging. All the derived positions of the above five fundamental starting positions.

8. Relaxed passive movements, basic knowledge of classification of relaxed passive movements,definition, technique, effects and uses of relaxed passive movement.

Orientation to Physiotherapy-:

- Term Physiotherapy/ Physical Therapy
- Definition of Physical Therapy by WHO & State Councils of Physiotherapy.
- History of Physiotherapy
- World Confederation for Physiotherapy (WCPT)
- Indian Association of Physiotherapists (IAP)
- Code and Ethics of Physiotherapy Profession By IAP
- World Physical Therapy Day
- Specializations in Physiotherapy
- Scope of Physiotherapy
- Practical: Structured Monitoring & Assessment

SUGGESTED READINGS Ex. therapy-I –

1. Therapeutic Exercises- foundations and Techniques- Kisner and Colby.

2. Muscle Testing and Function- Kendall

3. Principles of exercise therapy – Gardner.

4. Practical Exercise Therapy – Hollis.

5. Beard's Massage – Wood.

6. Motor control- theory and practical application- Shumway.

7. Hydrotherapy – Principles and practice – Campion.

8. Measurement of Joint Motion – A guide to goniometry – Norkin and White Davis.

Name of the Program- Bachelor of Physiotherapy (BPT)

Placement of the Course – BPT Semester I

Name of the Course	**Basics of Electro Therapy I Theory**
Course Code	**BPT23S104T**
Course Description	**Core Theory**
Credit per Semester	**4 Credits**
Hours per Semester	**60 Hours**

Course Learning Outcomes	
CO 1	State and explain physiology of pain, pain pathways & methods of pain modulation, selection appropriate modality for pain modulation.
CO 2	State, explain and assess physiological effects, therapeutic effects/uses, compare and contrast merits/demerits, indications/contra-indications of various therapeutic ions & topical pharmaco - therapeutic agents to be used for the application of Iontophoresis & sono/ phonophoresis, describe & identify equipment's used to deliver Iontophoresis & sono/ phonophoresis.
CO 3	State, explain and assess physiological effects, therapeutic effects/uses, compare and contrast merits/demerits, indications/contra-indications of various Low/Medium & High Frequency currents / Actinotherapy, describe & identify various equipment's used to deliver therapeutic currents

Course Content

Physical Properties:

1. Conductors, insulators, potential difference, Resistance and Intensity.

2. Ohm's Law, Effects of current electricity

3. Rectifying devices- thermionic valves, semiconductors, transistors, amplifiers, transducers, oscillator circuit.

4. Capacitance, condensers and AC and DC circuits

5. Chemical effects - Ions and electrolytes, ionization, production of EMF by chemical action

6. Magnetic effects, molecular theory of magnetism, magnetic effects, electromagnetic induction

7. Thermal effects- Joule's law and heat production

8. Milli-ammeter and voltmeter, transformers and choke coil

9. Physical principles of sound and its properties

10. Physical principles of light and its properties

11. Electromagnetic spectrum- biophysical application.

Electrical Supply:

1. Brief outline of mains supply of current, safety devices, earthing, fuses etc.

2. Short circuit, electric shock & earth shock, First aid and initial management of electric shock.

Low frequency currents:

1. Introduction to DC, AC and modified currents

2. Production of DC- physiological and therapeutic effects of DC,

3. Iontophoresis- principles of clinical application, indication, contraindication, precaution, operational skills of equipment and patient preparation.

4. Modified DC –various pulses, duration and frequency and their effects on nerve and muscle tissue. Production of IDC and surged currents and their effects, principle of clinical application, physiological an therapeutic effects, indication, contraindication, precaution, operational skills, equipment and patient preparation.

5. Sinusoidal currents, biodynamic pulses.

SUGGESTED READINGS

1. Low and Reed – Electrotherapy Explained: Principles and Practice

2. Claytons Electrotherapy

3. Jagmohan Singh – Textbook of Electrotherapy.

4. Kahn - Principles and Practices of Electrotherapy

5. Lehmann – Therapeutic Heat and Cold

Name of the Program- Bachelor of Physiotherapy (BPT)

Placement of the Course – BPT Semester I

Name of the Course	**English & Communication Skills**
Course Code	**BPT23S105T**
Course Description	**Elective**
Credit per Semester	**2 Credits**
Hours per Semester	**30 Hours**

Course Learning Outcomes: The student will be able to	
CO 1	Apply basics of grammar and writing skills
CO 2	Apply and communicate ideas orally and in writing with a high level of proficiency
CO 3	Use appropriate expressions in varied situations and topics of interest
CO 4	Demonstrate independence in using basic language structure in oral and written
CO 5	Apply correct usage of English grammar in writing and speaking
CO 6	Speak in English both in terms of fluency and comprehensibility

Course Content-

Basics of Grammar –
Vocabulary, Synonyms, Antonyms, Prefix and Suffix, Homonyms, Analogies and Portmanteau words

Basics of Grammar – Part II –
Active, Passive, Direct and Indirect speech, Prepositions, Conjunctions and Euphemisms

Writing Skills -
Letter Writing, Email, Essay, Articles, Memos, one word substitutes, note making and Comprehension
Writing and Reading, Summary writing, Creative writing, newspaper reading 6
Practical Exercise, Formal speech, Phonetics, semantics and pronunciation 6

Introduction to communication skills
Communication process, Elements of communication, Barriers of communication and how to overcome them, Nuances for communicating with patients and their attenders in Hospitals

Speaking
Importance of speaking efficiently, Voice culture, Preparation of speech. Secrets of good delivery, Audience psychology, handling , Presentation skills, Individual feedback for each student, Conference/Interview technique

Listening
Importance of listening , Self-assessment, Action plan execution, Barriers in listening, Good and persuasive listening

Reading
What is efficient and fast reading, Awareness of existing reading habits, tested techniques for improving speed, Improving concentration and comprehension through systematic study

Non Verbal Communication
Basics of non-verbal communication, Rapport building skills using neuro- linguistic programming (NLP), Communication in Physiotherapy practice

Text books:
1. Lock G. Functional English grammar: An introduction for second language teachers. Cambridge University Press;1996
2. Van Servellen G. Communication skills for the health care professional: Concepts, practice, and evidence. Jones & Bartlett Publishers; 2009.

Name of the Program- Bachelor of Physiotherapy (BPT)

Placement of the Course – BPT Semester I

Name of the Course	**BASIC YOGA PRACTICES**
Course Code	**BPT23S106T**
Course Description	**Elective**
Credit per Semester	**2 Credits**
Hours per Semester	**45 Hours**

Course Learning Outcomes: The student will be able to	
CO 1	Maintaining one's health
CO 2	Following a specific routine module for general health

Course Content-

Unit – I Breathing Practices

a. Hands stretch breathing
b. Ankle stretch breathing
c. Rabbit breathing
d. Shashankasana breathing
e. Instant Relaxation Technique

Unit – II Loosening exercises

a. Jogging
b. Forward and Backward bending
c. Side bending
d. Twisting
e. Pavanamuktasana Kriya
f. Quick relaxation technique

Unit – III Surya Namaskara

Unit – IV Yoga Asana

a. Standing Asanas
b. Sitting Asanas
c. Prone Asanas
d. Supine Asanas

Unit – V Pranayama Practices and preparation &Kriya

a. Kapalabharti and sectional breathing
b. Surya, Cahndra, Anuloma Viloma, Nadishodhana, Shitali, Sitkari, Sadanta
c. Bhramari and Nadanusandhana

Kriya –

1. Dhauti : Vastra Dhauti, Daëòa Dhauti – Once in fifteen days
2. Neti : Ghåta Neti and Dugdha Neti
3. Nauli : Madhyam Nauli, Väma Nauli, Dakñina Nauli and Nauli Kriyä
4. Kapälabhäti :Vätkrama Kapälabhäti, Çétkrama, and Vyutakarma Kapälabhäti
5. Çaìkhaprakñälana : Laghu and Pürëa Çaìkhaprakñälana.

Reference Books:

1. Swami Satyananda Saraswati: Asana, Pranayama, Mudra, Bandha (Yoga Publications Trust, Munger, Bihar, India).
2. Swami Muktibodhananda Saraswati : Hatha Yoga Pradeepika, Yoga Publications Trust (Munger, Bihar, India) .
3. Dr R Nagarathna (2014). Yoga for Promotion of Positive Health, SVYP, Bangalore.

Name of the Program- Bachelor of Physiotherapy

Placement of the Course – Semester I

NAME OF THE COURSE	**Human Anatomy- I Practical**
COURSE CODE	**BPT23S101P**
COURSE DESCRIPTION	**Core Practical**
CREDIT PER SEMESTER	**2 credits**
HOURS PER SEMESTER	**60 hours**

Course Learning Outcomes: The student will be able to	
CO 1	Identify anatomical aspects of muscles, bones, joints, their attachments of thorax and upper quadrant & to understand and discuss analysis of movements with respect to bones, joints and soft tissues related to musculoskeletal system of thorax, & upper extremity.
CO 2	Spot structures of the cardio vascular & respiratory system, mechanism of respiration and the course of blood vessels, structure of rib cage & its contents with special emphasis to lungs, tracheo-bronchial tree, respiratory muscles & heart.
CO 3	Identify source & course of major arterial, venous & lymphatic system, related to upper quadrant, thorax and heart.
CO 4	Demonstrate the movements of various joints , name and identify the origin/insertion, nerve /blood supply, root value & function of various skeletal muscles (upper extremity and lower extremity) with special emphasis to extremities, find various surface land-marks.

Practical/Viva

1. Demonstrations on dissected specimens of upper limb, lower limb.

2. Osteology of upper limb, Lower limb bones, Ribs (only general features).

3. Surface anatomy of Superior Extremity & Inferior Extremity, Surface anatomy.

4. Demonstration on cadaver of thoracic wall, mediastinal structure , Heart , Lungs.

5. Histology: 1) Epithelium (Simple ,Compound)

   2) Connective Tissue (Cartilage & Bone)

   3) Muscle (smooth & skeletal)

4) Nervous tissue (Nerve trunk, spinal cord, cerebellum, cerebrum, dorsal root ganglion, sympathetic ganglion)

5) Blood vessels (Large & medium sized arteries and vein)

Name of the Program- Bachelor of Physiotherapy

Placement of the Course – Semester I

Name of the Course	**Human Physiology- I Practical**
Course Code	**BPT23S102P**
Course Description	**Core Practical**
Credit per Semester	**2 credits**
Hours per Semester	**60 hours**

`Course Learning Outcomes: The student will be able to	
CO 1	Acquire the skill of basic clinical examination, with special emphasis to Hematology, Cardiovascular & Respiratory system

Course Content

Practical/Viva

1. Hematology : RBC count, WBC count, Differential count. ESR, Bleeding & Clotting time, Estimation of Hemaglobin, Blood groups.

2. Human Physiology : Examination of a) Respiratory system, b) Heart & arteries pulse, c) measurement of blood pressure.

3. Effect of exercises on body physiology.

Name of the Program- Bachelor of Physiotherapy

Placement of the Course – Semester I

Name of the Course	**Basics of Exercise Therapy - I Practical**
Course Code	**BPT23S103P**
Course Description	**Core Practical**
Credit per Semester	**2 Credits**
Hours per Semester	**60 Hours**

Course Learning Outcomes: The student will be able to		
CO1	Demonstrate various therapeutic exercises on self & acquire the application skill on models.	
CO2	Acquire the skill of assessment of isolated & group muscle strength, & Range of motion of the joints subjectively & objectively.	
CO3	Understand various positioning of patients.	

Course Content

Practical/Viva

1.Relax passive movement/types of exercise

2. MMT

3. Fundamental and derived positions

4. Application of relaxed passive movements, active assisted and resisted movements to all joints in limbs.

Name of the Program- Bachelor of Physiotherapy

Placement of the Course- BPT Semester I

Name of the Course	**Basics of Electrotherapy - I Practical**
Course Code	**BPT23S104P**
Course Description	**Core Practical**
Credit per Semester	**2 Credits**
Hours per Semester	**60 Hours**

Course Learning Outcomes: The student will be able to	
CO1	Understand basic electronics system and magnetism used in physiotherapy and gain information about safety devices.
CO2	Identify and stimulate different motor points region wise
CO3	Describe the Main electrical supply, Electric shock, examine precautions to be taken for prevention of electric shock.

Course Content

Practical/Viva

1. To study the basic operation of electric supply to the equipment and safety devices.
2. To locate and stimulate different motor points region wise.

Name of the Program- Bachelor of Physiotherapy

Placement of the Course- BPT Semester II

Name of the Course	**Human Anatomy- II Theory**
Course Code	**BPT23S201T**
Course Description	**Core Theory**
Credit per Semester	**3 Credits**
Hours per Semester	**54 hours**

Course Learning Outcomes: The student will be able to	
CO 1	Explain about anatomy of lower quadrant including spine, pelvis :list bones, joints, soft tissues, muscles related to musculoskeletal system of spine and to localize various surface land-marks, apply related radiological and living anatomy.
CO 2	Explain about anatomy of structures of head, face and neck
CO 3	Explain about and outline various parts of nervous system: Source, course & components of various trans-sections of spinal tracts and C.N.S; Source, course & components of various trans-sections of brain, cranial nerves (Special emphasis to III, IV, V, VI & VII) & peripheral nerves.
CO 4	Explain about blood circulation of C.N.S. & spinal cord.
CO 5	Explain about the course of peripheral nerves.
CO 6	Explain about anatomical basis of clinical conditions of nervous system.
CO 7	Explain about various structures of the genitor-urinary system, abdomen, pelvic organs and sense organs and apply knowledge to living anatomy

Course Content

1. Abdomen & Pelvis

(1) Abdominal wall, inguinal canal, Stomach, Liver, spleen, pancreas, kidney with ureter, small Intestine, Large Intestine, Abdominal Aorta, Portal vein, Diaphragm, Sacral plexus, posterior abdominal wall.

(2) Sacro-Iliac joint.

2. Vertebral Column
(1) Identification of vertebrae of different regions.
(2) Intervertebral joints
(3) Intervertebral disc
(4) Muscles of vertebral column
(5) Weight transmission
(6) Applied anatomy
(7) Radiological anatomy

3. Head & Neck
(1) Muscle of face, Cutaneous distribution of Trigeminal nerve, Triangles of neck (anterior & posterior) Sternocleidomastoid and Trapezius muscles, Muscle of mastication, Nasal cavity, Pharynx and Larynx (Parts, Sensory distribution).
(2) Joints: Temporo-mandibular Joint, Atlanto-occipital and Atlanto-Axial joints.

4. Neuroanatomy
(1) General Introduction and classification, Autonomic Nervous system
(2) Sympathetic and Para Sympathetic with their difference in distribution and function).Spinal cord, spinal Reflex, Pyramidal and extra-pyramidal tracts (Detail Nucleus not required), Blood supply; brainstem: gross features and blood supply; Cerebellum:gross features and functions; Cerebrum: gross features, functional areas, blood supply; Related clinical anatomy.

5. Cranial Nerves
(1) Names in order, Individual Cranial Nerve distribution, Idea about Upper Motor Neuron and Lower Motor Neuron, applied Anatomy.

Name of the Program- Bachelor of Physiotherapy

Placement of the Course- BPT Semester II

Name of the Course	**Human Physiology - II Theory**
Course Code	**BPT23S202T**
Course Description	**Core Theory**
Credit per Semester	**4 credits**
Hours per Semester	**60 hours**

Course Learning Outcomes: The student will be able to	
CO 1	describe of various systems, with special reference to Digestive System, Excretory system
CO 2	describe physiological functions of reproductive system, gastro intestinal system
CO 3	Describe physiological functions of Endocrine System
CO 4	Describe about skin structure and function

Course Content

1. Digestive System

1. General arrangement of alimentary canal, liver, pancreas -position, structure and functions.

2. Nutrition and Diet-carbohydrate, protein, fat, salts, water, vitamins and minerals**,** digestion, absorption and Metabolism.

2. Reproductive System.

1. Sex determination and development of puberty, male sex hormones, spermatogenesis, Female sex hormones, menstrual cycle. Ovulation, pregnancy, Function of placenta, lactation.

3. Excretory System.

Gross and minute structures of kidney, renal circulation, Mechanism of formation of urine, Glomerular filtration rate and tubular function, renal function and renal tests. Physiology of micturition.

4. Endocrine System. (Detailed)

1. Structure and function of pituitary (anterior & posterior). Thyroid, Para-thyroid, adrenal cortex, adrenal medulla, Thymus and pancreas.
2. Blood sugar regulation.

5. Skin-Structure and functions.

Name of the Program- Bachelor of Physiotherapy

Placement of the Course- BPT Semester II

Name of the Course	**Basics of Exercise Therapy II Theory**
Course Code	**BPT23S203T**
Course Description	**Core Theory**
Credit per Semester	**4 Credits**
Hours per Semester	**60 Hours**

Course Learning Outcomes: The student will be able to	
CO 1	define the various terms used in Exercise Therapy
CO 2	explain the basic principles of biophysics related to mechanics of movement / motion & apply these principles to simple equipment designs along with their efficacy in Therapeutic Gymnasium.
CO 3	Explain movements in terms of anatomical planes and axes, demonstrate various starting & derived positions used in therapeutics.
CO 4	Understand & define therapeutic application of massage, Suspension therapy, relaxation techniques & resisted exercise.
CO 5	Acquire the diagnostic skill of objective assessment of Range of Motion of the upper quadrant, head and neck by Goniometry

Course Content

1. Resisted exercises – Techniques and types of resistance, SET system (Heavy resisted exercises, Oxford method, De Lorme method, Mc queen method and adaptation of skeletal muscles.

2. Suspension therapy: Principles of suspension, types of suspension therapy, effects and uses of suspension therapy-their application either to mobilize a joint, increase joint range of motion or to increase muscle power-explaining the full details of components used for suspension therapy.

3. Massage: Definition of massage, type of massage, general effect and uses of massage, local effects of individual manipulation (physiological effects), contra-indications, techniques of application of all manipulations-stroking, Effleurage, kneading and picking up, skin rolling (back), clapping, tapping, friction etc.

4. Joint Movement and measurement: Goniometry. Classification of joint movements, causes of restriction of joint movement, Principle and application of Goniometry.

5. Limb length (only lower limb) & girth measurement, assessment of sensations & reflexes, grades of deep tendon, bed Rest-Its necessity & Complications.

6. Therapeutic Gymnasium-equipment's in the gymnasium, Set up of gymnasium and its importance, Describe muscle fatigue, muscle spasm and tension. Factors contributing to fatigue and relaxation.

7.Relaxation - Describe relaxation, classification & types, Effects and uses, Techniques of relaxation. Factors contributing to fatigue and relaxation. indications and contraindications.

SUGGESTED READINGS Ex. therapy-II–

1. Therapeutic Exercises- foundations and Techniques- Kisner and Colby.

2. Muscle Testing and Function- Kendall

3. Principles of exercise therapy – Gardner.

4. Practical Exercise Therapy – Hollis.

5. Beard's Massage – Wood.

6. Motor control- theory and practical application- Shumway.

7. Hydrotherapy – Principles and practice – Campion.

8. Measurement of Joint Motion – A guide to goniometry – Norkin and White Davis.

Name of the Program- Bachelor of Physiotherapy

Placement of the Course- BPT Semester II

Name of the Course	**Basics of Electrotherapy II Theory**
Course Code	**BPT23S204T**
Course Description	**Core Theory**
Credit per Semester	**4 credits**
Hours per Semester	**60 hours**

Course Learning Outcomes: The student will be able to	
CO 1	describe the Production &Physiological effects, Therapeutic uses, merits, demerits indication &contraindications of various low/medium Frequency Currents modes.
CO 2	Acquire the skill of Application of the Electro therapy modes on electrotherapy equipment for the purpose of Assessment &Treatment
CO 3	Explain phases of wound healing, physiological effects, therapeutic effects/uses, compare and contrast merits/demerits, indications/contra- indications of various electrotherapy modalities for wound healing

Course Content

Electrical Reactions and electro diagnostic tests:

1. Electric stimuli and normal behaviour or nerve and muscle tissue.
2. Types of lesion and development of reaction of degeneration.
3. Faradic/ IDC test (FG test).
4. SD curve and its application.
5. Rheobase and chronaxie and pulse ratio.

Ultra Violet Radiation:

1. Wavelength, frequency, types and sources of UVR generation, techniques of irradiation, physiological and therapeutic effects, indication, contraindication, precaution, operational skills, equipment and patient preparation
2. Dosage calculation of UVR.

Section-F

Superficial heat – Infrared Radiation, Paraffin wax bath, moist heat, electrical heating pads, fluido therapy, contrast bath etc.

1. IRR- Wavelength, frequency, types and sources of IRR generation, techniques of irradiation, physiological and therapeutic effects, indication, contraindication, precaution, operational skills, equipment and patient preparation
2. PWB – contents, methods of application, maintenance of equipment, indication, contraindication, precaution, operational skills, equipment and patient preparation
3. Hydro collator packs – contents, methods of application, indication, contraindication, precaution.

SUGGESTED READINGS

1. Low and Reed – Electrotherapy Explained: Principles and Practice
2. Claytons Electrotherapy
3. Jagmohan Singh – Textbook of Electrotherapy.
4. Kahn - Principles and Practices of Electrotherapy
5. Lehmann – Therapeutic Heat and Cold

Name of the Program- Bachelor of Physiotherapy

Placement of the Course- BPT Semester II

Name of the Course	**Biochemistry**
Course Code	**BPT23S205T**
Course Description	**Elective**
Credit per Semester	**2 Credits**
Hours per Semester	**30 Hours**

Course Learning Outcomes: The student will be able to	
CO 1	describe carbohydrate, fat and protein metabolism, classification, digestion, absorption , regulation and clinical application
CO 2	define bio-enzymes, classify, factors affecting enzyme action and therapeutic uses describe vitamins, minerals, hormones - classify, discuss manifestations of nutritional deficiency
CO 3	discuss normal levels in body fluids required for functioning and their abnormal levels to understand the disease process
CO 4	discuss biochemical mechanisms of muscle contraction and biochemistry of connective tissue
CO 5	describe functions of nucleic acids

Course Content-

THEORY

(1) BIO-PHYSICS: Concepts of pH and buffers, Acid-base equilibrium, osmotic pressure and its physiological applications.

(2) CELL: Morphology, Structure and functions of cell, cell membrane, Nucleus, Chromatin, Mitochondria, endoplasmic reticulum, ribosome.

(3) CARBOHYDRATES, LIPIDS & PROTEINS & METABOLISM: (detailed)Definition, functions, sources, classification & metabolism.

(4) VITAMINS: (detailed)Classification, Fat soluble vitamins A,D,E,K Water soluble vitamins-B Complex and Vitamin ‘C’, Daily requirement physiological functions and disease of vitamin deficiency.

(5) BIO-ENERGETICS: Concept of free energy change, Energetic reaction and endergonic reactions, Concepts regarding energy rich compounds. Respiratory chain and Biological oxidation.

(6) WATER METABOLISM: Fluid compartments, Daily intake and output, Dehydration, Sodium and potassium metabolism.

(7) MINERAL METABOLISM: (detailed)Iron, Calcium, Phosphorous, Trace elements.

(8) NUTRITION: (detailed)Nutritional aspects of carbohydrate, fat and proteins, Balanced diet, Metabolism in exercise and injury, Diet for chronically ill and terminally ill patients.

(9) CONNECTIVE TISSUE: Mucopolysacharides, Connective tissue proteins, Glyco-proteins, Chemistry and Metabolism of bone and teeth.

(10) HORMONES: (detailed) General Characteristic and Mechanism of Hormone actions.

Name of the Program- Bachelor of Physiotherapy

Placement of the Course- BPT Semester II

Name of the Course	**Environmental Science**
Course Code	**BPT23S206T**
Course Description	**Elective Course**
Credit per Semester	**2 Credits**
Hours per Semester	**30 Hours**

Course Learning Outcomes: The student will be able to	
CO 1	Describe ecosystem and its structural and functional aspects, examine interconnectedness among all the biotic and abiotic components of environment and dynamic nature of ecological processes in maintaining equilibrium in nature.
CO 2	List Earth's resources, their generation, extraction and impact of human activities on earth's environment, to examine effective management strategies, and critical insight on major sustainability issues.

Course Content

Unit 1: Introduction to environmental studies

1. Multidisciplinary nature of environmental studies; components of environment – atmosphere, hydrosphere, lithosphere and biosphere.
2. Scope and importance; Concept of sustainability and sustainable development.

Unit 2: Ecosystems

3.Structure and function of ecosystem.
Energy flow in an ecosystem: food chain, Food web, Ecological succession.

4.Case studies of the following ecosystems:
a) Forest ecosystem
b) Grassland ecosystem
c) Desert ecosystem
d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

Unit 3: Natural Resources: Renewable and Non-renewable Resources

5. Land Resources and land use change; Land degradation, soil erosion and desertification.

6. Deforestation: Causes and impacts due to mining, dam building on environment, forests, biodiversity and tribal populations.

7.Water: Use and over-exploitation of surface and ground water, floods, droughts, conflicts over water (international & inter-state).

8. Heating of earth and circulation of air; air mass formation and precipitation
9.Energy resources: Renewable and non-renewable energy sources, use of alternate energy sources, growing energy needs, case studies.

Books:

1. Plumwood V, Low N. Global Ethics and Environment.
2. Gleick PH. Water in crisis. Pacific Institute for Studies in Dev., Environment & Security. Stockholm Env. Institute, Oxford Univ. Press. 473p. 1993;9.
3. Principles of conservation biology Martha J Groom; Gary K Meffe; C Ronald Carroll Sunderland, Mass. : Sinauer Associates,©2006.
4. Odum, E.P., Odum, H.T. & Andrews, J. 1971. Fundamentals of Ecology. Philadelphia: Saunders.
5. Pepper, I.L., Gerba, C.P. &Brusseau, M.L. 2011. Environmental and Pollution Science. Academic Press.
6. Raven, P.H., Hassenzahl, D.M. & Berg, L.R. 2012. Environment. 8th edition. John Wiley &Sons.
7. Rosencranz, A., Divan, S., & Noble, M. L. 2001. Environmental law and policy in India. Tripathi 1992.
8. Sengupta, R. 2003. Ecology and economics: An approach to sustainable development. OUP.
9. Singh, J.S., Singh, S.P. and Gupta, S.R. 2014. Ecology, Environmental Science and Conservation. S. Chand Publishing, New Delhi.
10. Sodhi, N.S., Gibson, L. & Raven, P.H. (eds). 2013. Conservation Biology: Voices from the Tropics. John Wiley &Sons.
11. Warren, C. E. 1971. Biology and Water Pollution Control. WB Saunders.

Name of the Program- Bachelor of Physiotherapy

Placement of the Course- BPT Semester II

Name of the Course	**Human Anatomy- II Practical**
Course Code	**BPT23S201P**
Course Description	**Core Practical**
Credit per Semester	**2 credits**
Hours per Semester	**60 hours**

Course Learning Outcomes: The student will be able to	
CO 1	Identify and list bones, joints, soft tissues, muscles related to musculoskeletal system of Spine, abdominal wall and pelvic floor and to localize various surface land-marks, apply related radiological and living anatomy.
CO 2	Identify structures of head, face and neck.
CO 3	Identify source, course & components of various trans-sections of spinal tracts and C.N.S; Source, course & components of various trans-sections of brain, cranial nerves (Special emphasis to III, IV, V, VI & VII) & peripheral nerves.
CO 4	Identify various structures of the genitor-urinary system, abdomen and pelvic organs and apply knowledge to living anatomy.

Course Content

1. Osteology of lumbar & cervical vertebrae, sacrum, Thoracic Vertebrae (Identification, general features).
2.Abdominal viscera, Viscera of pelvis and blood vessels.

3.Demonstration on cadaver of oral cavity, nasal cavity, pharynx, larynx, sagittal sections of head & neck, muscles of face and triangles of neck.

4.Cranial bones (Identification of individual bone with general features), Base of skull : different foramina in relation to cranial nerves, Cranial fossa and their relation to brain and Hypophysis cerebri, Cervical vertebrae.

5.Neuroanatomy:- Demonstration of gross specimens of spinal cord, brainstem, cerebellum, cerebrum and meninges, Identification of cranial nerves emerging from brain and brainstem.

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Placement of the Course- BPT Semester II

Name of the Course	**Human Physiology- II Practical**
Course Code	**BPT23S202P**
Course Description	**Core Practical**
Credit per Semester	**2 Credits**
Hours per Semester	**60 Hours**

Course Learning Outcomes: The student will be able to	
CO 1	Examine Sensory System including higher Functions.
CO 2	Examine deep and superficial reflexes and cranial nerve testing.

Course Content

Human Physiology: Examination of;
(a) Deep and superficial reflexes
(b) Cranial nerves
(c) Motor system
(d) Sensory System including Higher Function.

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Placement of the Course- BPT Semester II

Name of the Course	**Basics of Exercise Therapy -II Practical**
Course Code	**BPT23S203P**
Course Description	**Core Practical**
Credit per Semester	**2 Credits**
Hours per Semester	**36 Hours**

Course Learning Outcomes: The student will be able to	
CO 1	Apply therapeutic skills of massage and suspension therapy.
CO 2	Acquire the diagnostic skill of objective assessment of Range of Motion of the upper quadrant, head and neck by Goniometry.
CO 3	Learn and demonstrate the various application of relaxation techniques.

Course Content

1. Massage Therapy
2. Suspension Therapy
3. Goniometry
4. Relaxation techniques- general and local

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Placement of the Course- BPT Semester II

Name of the Course	**Basics of Electro Therapy II Practical**
Course Code	**BPT23S204P**
Course Description	**Core Practical**
Credit per Semester	**2 Credits**
Hours per Semester	**72 Hours**

Course Learning Outcomes: The student will be able to	
CO 1	To assess physiological effects, therapeutic effects/uses, compare and contrast merits/demerits, indications/contra-indications of various therapeutic ions & topical pharmaco -therapeutic agents to be used for the application of Iontophoresis & sono/ phonophoresis, describe & identify equipment's used to deliver Iontophoresis & sono/ phonophoresis
CO 2	Demonstrate the applications of hydrocollator units, IRR, PWB on model.

Course Content

1. To study the basic operation of electric supply to the equipment and safety devices.

2. To locate and stimulate different motor points region wise.

3. Therapeutic application of different low frequency current, stimulator, faradic foot bath, faradism under pressure/tension, iontophoresis.

4. To plot SD curve, find rheobase and chronaxie .

5. Applications of hydrocollator units, IRR, PWB.

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Placement of the Course- BPT Semester III

Name of the Course	**Exercise Therapy I Theory**
Course Code	**BPT23S301T**
Course Description	**Core Theory**
Credit per Semester	**4 credits**
Hours per Semester	**60 hours**

Course Learning Outcomes: The student will be able to	
CO1	**Gain Knowledge regarding therapeutic exercises.**
CO2	**Able to understand the techniques, determinants and application of stretching.**
CO3	**Understand the concepts of traction , its application and therapeutic uses.**
CO4	**Learn about joint mobilization techniques and its effects on patient.**

Course Content

1. Therapeutic exercises – impact on physical function, classification, techniques, indications, contraindications, assessment and evaluation of patient.
2. Principles of aerobic exercises & its physiological response, testing as basis of aerobic program
3. Determinants of exercise program.
4. Stretching Techniques and its determinants.
5. Peripheral and spinal joint mobilization techniques.
6. Individual, group and mass exercises, maintenance exercises, plan of exercise-therapy tables and schemes
7. Principles of Traction, physiological and therapeutic effects, classification, types, indications, contraindications, techniques of application, operational skills and precautions.
8. Taping and bandaging techniques.

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Placement of the Course- BPT Semester III

Name of the Course	**Electro Therapy I Theory**
Course Code	**BPT23S302T**
Course Description	**Core Theory**
Credit per Semester	**4 Credits**
Hours per Semester	**60 hours**

Course Learning Outcomes: The student will be able to	
CO1	**Gain theoretical Knowledge regarding low frequency currents.**
CO2	**Able to understand the modes of application of TENS, IFT.**
CO3	**Understand the practical concepts of SWD, MWD and its therapeutic uses.**
CO4	**Learn about application of various deep heating modalities and its effects on patient.**

Course Content

1. Low Frequency Current:

TENS:

a) Types of low frequency, pulse widths, frequencies and intensities used as TENS application

b) Theories of pain relief.

c) Principle of clinical application, physiological and therapeutic effects, indication, contraindication, precaution, operational skills, equipment and patient preparation.

2 Medium Frequency Current (Interferential current)

Definition, characteristics, physiological/therapeutic effect of I.F current, indication, technique of application, contraindication and precaution.

3 High Frequency Current

a) SHORT WAVE DIATHERMY - Introduction, physiological effect and therapeutic effect of SWD, method of application (capacitor field method and cable method etc) technique of treatment, indication, contraindication and dangers.

b) PULSED SWD - Definition, characteristics, mechanism of work, physiological effect and therapeutic effects, indications, techniques of application, principle of treatment and contraindication.

c) MICROWAVE DIATHERMY (MWD)-

a. Introduction and characteristics.
b. Physiological & Therapeutic effects.
c. Techniques of application and principle of treatment.
d. Indications, contraindication and Dangers of MWD.

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Placement of the Course- BPT Semester III

Name of the Course	**Biomechanics & Kinesiology I**
Course Code	**BPT23S303T**
Course Description	**Core Theory**
Credit per Semester	**4 Credits**
Hours per Semester	**60 Hours**

Course Learning Outcomes: The student will be able to	
CO1	Describe biomechanics of connective tissue, laws governing forces, study of kinematics and kinetics, clinical and instrumented testing methods used to identify biomechanical impairments, muscle activity and postural control during motion.
CO2	Describe impairments related to biomechanical alterations in conditions such as shoulder dysfunction, knee osteoarthritis and low back pain.
CO3	Apply clinical and instrumented testing methods to measure kinematics and muscle action, identify altered biomechanics using clinical tests.
CO4	Analyze primary impairment and prescribe corrective strategies.

Course Content

1. Essential Concepts

a) Motion and forces, Axis and planes, Mechanical lever, lever in Human body.
b) Force distribution-linear force, resultant force & equilibrium, parallel forces in one plane concurrent force.
c) Newton's law – Gravity and its effects on human body
d) Forces and moments in action
e) Concepts of static equilibrium and dynamic equilibrium
f) Composition and resolution of forces
g) Friction, Pulleys.

2 Joint Structure and Functions

a) Basic Principles of joint structure and function.
b) Tissues present in and around joints including fibrous tissue, bone cartilage, connective tissue, ligaments, tendons etc.

c) Classification of joints.

3 Muscle Structure and Functions
a) Mobility and Stability functions of muscle
b) Elements of muscle structures and its properties.
c) Types of muscle contraction and muscle work.
d) Classification of muscles and their functions
e) Group action of muscles, coordinated movement.

4. Posture:
a) Anatomical aspects of posture
b) Types of Posture
c) Assessment of Posture
d) Factors affecting posture
e) Postural deviation

5. Kinematics and Kinetics Concepts of following joints
a) Upper Extremity:
b) Scapulo-shoulder Joint
c) Elbow Joint
d) Wrist Joint & Hand

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Placement of the Course- BPT Semester III

Name of the Course	**Pathology**
Course Code	**BPT23S304T**
Course Description	**Core Theory**
Credit per Semester	**4 Credits**
Hours per Semester	**60 Hours**

Course Learning Outcomes: The student will be able to	
CO 1	Describe cell injury &response of different tissues, organs and capacity of the body to heal.
CO 2	Acquire knowledge of general concepts of neoplasia with reference to etiology, gross & microscopic features, & diagnosis, in different tissues, & organs of the body.
CO 3	Acquire knowledge of common immunological disorders & their effects on the human body
CO 4	Acquire knowledge of prevalent communicable diseases, agents responsible for causing clinical infections, pertaining to C.N.S, C.V.S, musculoskeletal system, respiratory system, genitourinary system, wound infections and newly emerging pathogens
CO 5	Describe etiology–pathogenesis, effects & clinical–pathological correlation of common infections & non-infectious diseases
CO 6	Describe common hematological disorders & investigations necessary to diagnose them.
CO 7	describe importance and best practices to prevent development of infections in self and patients (universal safety precautions).

Course Content

1. Aims and objectives of study of pathology.
2. Brief outline of cell injury, degeneration, necrosis and gangrene.
3. Inflammation: Definition, vascular and cellular phenomenon, difference between Transudate and exudates, granuloma
4. Circulatory disturbances: Hemorrhage, Embolism, Thrombosis, Infraction, shock, Volkmann's ischemic contracture.
5. Blood disorder: Anemia, Bleeding disorder.

6. CVS: Heart and Blood vessels, Coronary heart disease.
7. Respiratory System: Ch. Bronchitis, Asthma, Bronchiectasis, Emphysema, COPD.
8. Bones and Muscles: Arthritis & Spondyloarthropathy.
9. PNS and Muscles: Neuropathies, Poliomyelitis & Myopathies.
10. CNS: Infection, Demyelinating disease, Degenerative disease.
11. Neoplasia.
12. Growth and its disorders, like hypertrophy, hyperplasia & atrophy.
13. Autoimmune diseases.
14. Healing and repair.
15. Diabetes mellitus and gout.

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Placement of the Course- BPT Semester III

Name of the Course	**Myofascial Release Technique**
Course Code	**BPT23S305T**
Course Description	**Elective**
Credit per Semester	**2 Credits**
Hours per Semester	**45 Hours**

Course Learning Outcomes: The student will be able to	
CO 1	Explain about effects and approaches of MFR.
CO 2	Explain about aims & benefits of MFR

Course Content

1.Defination – Fascia, Myofascial Release Technique.

2.Functions of Fascia.

3. Causes of Myofascial Restriction.

4. Physiological Effects of Myofacial Release Technique (MFR).

5. General Techniques of applications of MFR.

6.Indications & Contraindications of MFR.

7. Precautions of MFR.

8.Aims & Benefits of MFR.

9. Types of MFR :-

- Skin Rolling
- Cross Hand Release Technique – a) Longitudinal Release Technique

  b) Transverse Release Technique

- J- Strokes
- Deep Tissue Stroking .

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Placement of the Course- BPT Semester III

Name of the Course	**Microbiology**
Course Code	**BPT23S306T**
Course Description	**Core Theory**
Credit per Semester	**2 Credits**
Hours per Semester	**30 Hours**

Course Learning Outcomes: The student will be able to	
CO 1	Describe cell injury &response of different tissues, organs and capacity of the body to heal.
CO 2	Acquire knowledge of general concepts of neoplasia with reference to etiology, gross & microscopic features, & diagnosis, in different tissues, & organs of the body.
CO 3	Acquire knowledge of common immunological disorders & their effects on the human body.
CO 4	Acquire knowledge of prevalent communicable diseases, agents responsible for causing clinical infections, pertaining to C.N.S, C.V.S, musculoskeletal system, respiratory system, genitourinary system, wound infections and newly emerging pathogens.
CO 5	Describe etiology–pathogenesis, effects & clinical–pathological correlation of common infections & non-infectious diseases.
CO 6	Describe common hematological disorders & investigations necessary to diagnose them.
CO 7	Describe importance and best practices to prevent development of infections in self and patients (universal safety precautions).

Course Content

1. Introduction and History of Microbiology
2. General lectures on Microorganisms (brief).
3. Sterilization and asepsis.

4. Infection- Source of infection and Entry and its Spread
5. Immunity- Natural and Acquired
6. Allergy and hypersensitivity.
7. Outline of common pathogenic bacteria and diseases produced by them.
(a) Respiratory tract infections.
(b) Meningitis.
(c) Enteric infections.
(d) Anaerobic infections.
(e) Urinary tract infections.
(f) Leprosy, tuberculosis and miscellaneous infections.
(g) Wound infections.
(h) Sexually transmitted diseases.
(i) Hospital acquired infections.

8. Virology- virus infections with special mention of Hepatitis.
9. Poliomyelitis & rabies

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Placement of the Course- BPT Semester III

Name of the Course	**Exercise Therapy I Practical**
Course Code	**BPT23S301P**
Course Description	**Core Practical**
Credit per Semester	**2credits**
Hours per Semester	**60 Hours**

Course Learning Outcomes: The student will be able to	
CO1	**Gain practical Knowledge regarding therapeutic exercises.**
CO2	**Able to understand the techniques, determinants and application of stretching.**
CO3	**Understand the practical concepts of traction , its application and therapeutic uses.**
CO4	**Learn about application of taping and bandaging techniques and its effects on patient.**

Course Content

Practical/Viva:

1. Assessment and evaluative procedures including motor, sensory, neuromotor coordination, vital capacity, limb length, girth measurement.
2. Range of motion exercise.
3. Stretching.
4. Traction techniques.
5. Taping and bandaging techniques.

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Placement of the Course- BPT Semester III

Name of the Course	**Electro Therapy I Practical**
Course Code	**BPT23S302P**
Course Description	**Core Practical**
Credit per Semester	**2 credits**
Hours per Semester	**60 hours**

Course Learning Outcomes: The student will be able to	
CO1	Demonstrate various techniques of application by using modalities.
CO2	Interpretation and analysis of assessment and findings

Course Content

Practical/Viva:

1. Panel diagram of apparatus mentioned in theory

2. Testing of apparatus mentioned in theory

3. Technique of application of treatment modalities (demonstration and practice) mentioned in theory.

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Placement of the Course- BPT Semester IV

Name of the Course	**Exercise Therapy II Theory**
Course Code	**BPT23S401T**
Course Description	**Core Theory**
Credit per Semester	**4 credits**
Hours per Semester	**60 hours**

Course Learning Outcomes: The student will be able to	
CO1	Explain the physiological effects, therapeutic uses, merits / demerits of various land and water based (Hydrotherapy) exercise modes.
CO2	Discuss functional re-education techniques, principles of application of balance and coordination exercises, PNF, principles governing postural correction exercises and methods used for postural correction.
CO3	Identify and describe walking aids and methods used for gait training while using various walking aids.
CO4	Describe types of lung expansion therapy- breathing exercises, physiological effects, benefits, indications-contraindications, methods of breathing retraining and lung reexpansion therapy, respiratory PNF, thoracic expansion techniques, adjuncts used.
CO5	Describe physiological principles and acquire the skill of performing Pranayama & Yogasanas.

Course Content

1. P.N.F: Detail theory of proprioceptive- neuromuscular facilitation techniques.
2. Co-ordination Exercises: Definition of coordination movements. In coordinated movements, Factors for coordinated movements, technique of coordination exercises. Techniques to improve static and dynamic balance.
3. Posture: Types, factors responsible for good posture, factors for poor posture, principles of development of good posture, assessment of Posture.
4. 2 point, 3 point & 4 point gait: Introduction, crutch measurement, crutch balance, various types of crutch gait in details
5. Breathing exercises: Physiology of respiration, types of breathing exercises, technique if

various types of breathing excises, its effects and uses. Pulmonary exercises & postural drainage

6. Hydrotherapy: Introduction, various types of hydrotherapy units, construction and equipment used in hydrotherapy Principles, indications, contraindication, effects and uses of hydrotherapy. Precautions towards patient, towards therapist, equipment unit etc.

7. Yoga-Definition-History-Principles-Concepts, General effects of yogic posture on the body.

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Placement of the Course- BPT Semester IV

Name of the Course	**Electro Therapy II Theory**
Course Code	**BPT23S402T**
Course Description	**Core Theory**
Credit per Semester	**4 credits**
Hours per Semester	**60 hours**

Course Learning Outcomes: The student will be able to	
CO1	Understand about cryotherapy and their physiological, therapeutic effects, indications and contraindications and also demonstrate the different skills of application.
CO2	Describe & identify various equipment's with its physiological & therapeutic effects- like LASER therapy, ultrasonic therapy, Biofeedback, Combination therapy, Electrodiagnosis. (production, techniques of application, indications & contraindications, dangers, precautions and dosage) acquire the skill of application
CO3	Understand the mechanism and principles of nebulizers & humidifiers and acquire the skill of application.

Course Content

1. Laser
a) Introduction and characteristics.
b) Types of laser & its Effect on tissues.
c) Physiological & Therapeutic effects.
d) Indication, contraindication and dangers.
2. Ultrasonic Therapy
a) Introduction and characteristics & parameters.
b) Coupling media
c) Physiological & Therapeutic effects.
d) Indications, contraindications and dangers.
e) Testing of apparatus
f) Technique of application and dosage
3. Cryotherapy
a) Introduction, physical principles
b) Physiological effects

c) Indication and contraindication
d) Therapeutic effects and technique of application
4. Bio-Feedback
a) Introduction, principles of bio-feedback
b) Therapeutic effects of bio-feedback
c) Indication and contraindication
d) Technique of treatment
5. Electro diagnosis - EMG and ENG studies, techniques etc.
6. Advanced Electro Therapy
Combined therapy-principle, therapeutic uses and indication like U.S therapy with stimulation or TENS etc.
7. Nebulizer and humidifier- definition, principle, types, mechanism, uses and indications

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Placement of the Course- BPT Semester IV

Name of the Course	**Biomechanics & Kinesiology II**
Course Code	**BPT23S403T**
Course Description	**Core Theory**
Credit per Semester	**4 Credits**
Hours per Semester	**60 Hours**

Course Learning Outcomes: The student will be able to	
CO1	Understand the detailed biomechanics of Gait that includes gait cycle, its determinants, kinematics and kinetics, and gait deviations.
CO2	Explain kinetics and kinematics of joints of lower extremities, vertebral Column.

Course Content

1.Kinematics and Kinetics Concepts of following joints

a) Lower Extremity:

- Hip & pelvis
- Knee joint
- Patello femoral joint
- Ankle and foot

2.Biomecahnics of vertebral column

3. Biomechanics of Gait:

a) Gait cycle
b) Spatio-temporal parameters of gait
c) Kinematics and Kinetics of human gait
d) Determinants of gait
e) Gait deviations in various orthopedic/neurological conditions

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Placement of the Course- BPT Semester IV

Name of the Course	**Pharmacology Theory**
Course Code	**BPT23S404T**
Course Description	**Core Theory**
Credit per Semester	**4 Credits**
Hours per Semester	**60 Hours**

Course Learning Outcomes: The student will be able to	
CO 1	Describe pharmacological effects of commonly used drugs by patients referred for Physiotherapy; list their adverse reactions, precautions, contraindications, formulation & route of administration.
CO 2	Identify whether the pharmacological effect of the drug interferes with the therapeutic response of Physiotherapy & vice versa
CO 3	Indicate the use of analgesics & anti-inflammatory agents with movement disorders with consideration of cost, efficiency, & safety for individual needs.
CO 4	Describe use & adverse reactions of commonly used drugs by patients

Course Content

1. General Pharmacology: -Introduction and definitions, Nature and sources of drugs, Dosage forms of drugs. Routes of drug administration, Pharmacokinetics (Absorption, Bioavailability, Distribution, Metabolism, Excretion, First order, Zero order Kinetics);Pharmacodynamics (sites and mechanisms of drug action in brief, Adverse drug reactions, Margin of safety of drugs and factors influencing dosage and drug response)

2. Drugs Affecting ANS: - General Introduction, Drug affecting parasympathetic nervous system, Drug affecting sympathetic nervous systems.

3. Drugs Affecting Peripheral (Somatic) nervous System: - Skeletal Muscle Relaxants: Local Anesthetics.

4. Renal and CVS: - Diuretics; Renin-Angiotensin system and its inhibitors, Drug treatment of Hypertension, Angina pectoris, Myocardial infarction, Heart failure, and hypercholesterolemia.

5. Anti-inflammatory drugs and related autacoids: - Histamine, Bradykinin, 5-HT and their antagonists; Prostaglandins and leukotrienes; Nonsteroidal-Anti Inflammatory drug, Antirheumatic drugs and drugs used in gout.

6. Drugs Affecting CNS:- General anesthetics, Anxiolytics and hypnotics; Alcohol, Opioid analgesics, Drug dependence and abuse, Antiepileptic drugs, Drug therapy for Neurodegenerative disorders.

7. Endocrines:- Parathyroid hormone, Vitamin D, Calcitonin and drugs affecting Calcium balance, Thyroid and antithyroid drugs; Adrenocortical and anabolic steroids, Insulins and Oral Hypoglycemic agents, Oral contraceptives.

8. Drugs Affecting Respiratory System:- Drug therapy of bronchial asthma and chronic obstructive pulmonary disease.

9. Chemotherapy:- Introduction; sulfonamides, Fluoroquinolones, Penicillin's, Cephalosporins, Newer B-lactam antibiotic, Aminoglycosides, Macrolides and Newer antibiotics, Tetracyclines, Chloramphenicol, Chemotherapy of Tuberculosis and Leprosy, Antiseptics-Disinfectants.

10. Miscellaneous Topics: - Management of stroke, Toxiocology and Heavy metal poisoning, special aspects of paediatric and geriatric pharmacology; Drug interactions with drugs commonly used by physiotherapists; Hematinic, vitamins and antioxidants.

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Placement of the Course- BPT Semester IV

Name of the Course	**Splinting & Bracing**
Course Code	**BPT23S405T**
Course Description	**Elective Course**
Credit per Semester	**2 Credits**
Hours per Semester	**60 Hours**

Course Learning Outcomes: The student will be able to	
CO 1	Acquire knowledge about biomechanical principles of application of variety of aids & appliances used for ambulation, protection & prevention.
CO 2	Learn about the principles of the prescription and the checkout procedure of aids and appliances as per the physical dysfunction of the person.
CO 3	Acquire in brief knowledge about various material used for splints/ Orthoses & prostheses and their selection criteria.

Course Content

1.Introduction to bioengineering-
Classification of Aids & appliances (Splints/ Orthoses for spine, upper & lower limb; Prostheses for Lower limbs & Upper limbs)

2. Biomechanical principles in designing of appliances & assessment; Procedures for static & dynamic alignment of the Orthoses &Prostheses:
a. Introduction to Orthotics, Solid Ankle foot Orthoses (AFO)
b. Articulated AFO, Various Shoe modifications
c. Knee Ankle Foot Orthoses (KAFO)
d. Knee Orthoses (KO)
e. Hip Knee Ankle Foot orthoses (HKAFO), Hip Orthoses (HO)
f. Fracture Bracing and Flexible Lumbo-sacral Orthoses (LSO) and Thoraco-Lumbo-sacral Orthoses(TLSO)
g. Rigid TLSOs and Cervical Orthoses (CO)
h. Orthotic mgmt. of Scoliosis, Milwaukee and low profile scoliosis, orthoses, Scheuermann‟s Kyphosis & Osteoporosis
i. Orthoses for LBP, Introduction to Upper limb Orthotics and Shoulder orthoses(SO)

j. Shoulder (SO), Elbow Orthoses (EO) & Wrist Hand Orthoses (WHO)
k. Introduction to Gait in relation to the use of Orthoses /Prostheses
l. Prosthetic management of Forefoot amputees.
m. Prosthetic management of Syme's and hind foot Amputees
n. Below Knee Prosthesis & Prosthetic foot pieces
o. Alignment of Below Knee Prosthesis and gait deviations
p. Prosthetic Knees and Knee Disarticulation mgmt.
q. Above Knee Prosthesis, alignment, gait deviations
r. AK Checkouts, Prosthetic mgmt. of Hip Disarticulation, hemipelvectomy, Bilateral amputees and Congenital cases
s. Introduction to Upper Limb Prosthetics, Prosthetic mgmt. of Partial Hand amputees
t. Cosmetic Prostheses for all levels of Amputations
u. Task Specific Prostheses, Prosthetic mgmt. of Wrist Disarticulation, Myoelectric Below Elbow prosthesis
v. Body Powered Below Elbow Prostheses and it's components
w. Harnessing in BE
x. Prosthetic management of Elbow Disarticulation and Above Elbow Amputation.

3.Orthosis prescription criteria based on clinical scenario

4. Project:
Temporary splints: To fabricate ONE splint each [to use P.O. P, aluminum strips /sheets /wires rubber bands, Rexin, Orfit,etc]

Splinting- Practical Demonstration of the following
a) Cock up(dorsal/volar)
b) Outrigger,
c) Opponence splint
d) Anterior and posterior guard splints for gait training,
e) Foot drop splint
f) Facial splint
g) Mallet Finger Splint
h) C bar for 1st web space offhand

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Placement of the Course- BPT Semester IV

Name of the Course	**Community Medicine Theory**
Course Code	**BPT23S406T**
Course Description	**Core Theory**
Credit per Semester	**2 Credits**
Hours per Semester	**30 Hours**

Course Learning Outcomes: The student will be able to	
CO 1	explain the concept of health care, determinants of health, health care delivery systems and management issues in Health Services.
CO 2	explain role of Physiotherapists in preventing non-communicable diseases
CO 3	It will help them in improving their performance through better understanding of the health services at all the levels of community

Course Content

1. Introduction to community health.
2. General concepts of health and diseases, with reference to natural history of disease with pre-pathogenic and pathogenic phases. The role of socio-economic and cultural environment in health and disease. Epidemiology, definition and scope.
3. Public health administration- an overview of the health administration set up at Central and state levels.
4. The national health programmes -highlighting the role of social, economic and cultural factors in the implementation of the national programme.
5. Health problems of vulnerable groups-pregnant and lactating women, infants and preschool children, occupational and elderly groups.
6. Occupational Health-definition, scope, occupational disease prevention of occupational disease and hazards.
7. Social security and other measurement for the protection from occupational hazard accident and diseases. Details of compensation acts.
8. Family planning – objectives of national family planning programmes and family methods. A general idea of advantage and disadvantages of the methods.
9. Mental health emphasis on community aspects of mental diseases, role of physiotherapy

in mental health problems such as mental retardation.
10. Communicable disease- an overall view of communicable disease classified according to principle mode of transmission, role of insect and other factors.

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Placement of the Course- BPT Semester IV

Name of the Course	**Exercise Therapy II Practical**
Course Code	**BPT23S401P**
Course Description	**Core Practical**
Credit per Semester	**2 credits**
Hours per Semester	**60 hours**

Course Learning Outcomes: The student will be able to	
CO1	Assess the posture by using plumb line on the subject.
CO2	Apply skill of gait training while using various walking aids.
CO3	Apply skills of breathing exercises and retraining on self and others, postural drainage. on models.
CO4	Acquire the skill of functional re-education techniques on models, balance and coordination exercises, PNF, postural correction.
CO5	Apply the Peripheral Joint Mobilization techniques on subject.

Course Content

1. Assessment of Posture using plumb line.
2. Peripheral Joint Mobilization techniques.
3. Breathing exercise and postural drainage
4. Gait and crutch walking
5. Application of PNF techniques and patterns

Name of the Program- Bachelor of Physiotherapy

Placement of the Course- BPT Semester IV

Name of the Course	**Electro Therapy II Practical**
Course Code	**BPT23S402P**
Course Description	**Core Practical**
Credit per Semester	**2 credits**
Hours per Semester	**60 hours**

Course Learning Outcomes: The student will be able to	
CO1	Describe structure and function of nerve and muscle as a base for understanding the electro-diagnostic assessment.
CO2	Apply skills of electro-diagnosis (SD Curve), observe needle and surface EMG and NCV studies and analyze test results.
CO3	Interpretation and analysis of assessment and findings.

Course Content

1. Electro-diagnosis (demonstration and practice of following electro-diagnostic measures) F.G test, Observe EMG and NCV- demonstration only
2. Observe Biofeedback Unit.

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Placement of the Course- BPT Semester V

Name of the Course	**Clinical Orthopedics-I**
Course Code	**BPT23S501T**
Course Description	**Core Theory**
Credit per Semester	**4 Credits**
Hours per Semester	**60 Hours**

Course Learning Outcomes: The student will be able to	
CO 1	Provide the knowledge about orthopedic conditions the therapist would encounter in their practice.
CO 2	Demonstrate an understanding of orthopedic conditions causing disability, list the etiology, clinical features and methods of investigations and management.
CO 3	Perform a clinical examination & interpret finding of preoperative cold cases & post- operative cases.
CO 4	Read & interpret salient features of X-ray of the spine & extremities and Correlate with the clinical findings and also pathological/ biochemical studies pertaining to Orthopedic Conditions

Course Content

1. Introduction- Brief review of orthopedic conditions.
2. Classification of Fractures, fracture healing, factor influencing fracture healing & complications of fracture & its management.
3. Fracture, and dislocations- Upper extremity, lower extremity and spine.
4. Deformities: Common congenital and acquired deformities of foot, knee, hip, shoulder, elbow and wrist including hand and spine.
5. Infective conditions and lesion of joints and bones. Osteomyelitis, tuberculosis, pyogenic infection., T.B. Joints,
6. Arthritis – Osteoarthritis, Rheumatoid arthritis, cervical and lumbar spondylosis, Ankylosing spondylitis.
7. Soft tissue injuries of Upper extremity, lower Extremity and spine– like Sprains, strains, Tenosynovitis and contractures.
8. Operative Procedures, Amputation Common sites, causes & management, Arthroplasty of joints, joint replacement (total and partial), Osteotomy.

Text Books

1 Apley`s System of Orthopaedics by Louis Soloman

2 Outline of Fractures - John Crawford Adams.

3 Outline of Orthopaedics - John Crawford Adams.

4 Essentials of Orthopaedics- Maheshwari.

5 Textbook of Orthopaedics and Traumatology— M.N.Natarajan

6 Essentials of Orthopedic for physiotherapist – John Ebnezar

Name of the Program- Bachelor of Physiotherapy

Placement of the Course- BPT Semester V

Name of the Course	**Physiotherapy in Orthopedics Condition -I Theory**
Course Code	**BPT23S502T**
Course Description	**Core Theory**
Credit per Semester	**4 Credits**
Hours per Semester	**60 Hours**

Course Learning Outcomes: The student will be able to	
CO 1	Identify, discuss & analyze, the Musculoskeletal Conditions in terms of Biomechanical & Kinesiology basis & understand the same with the provisional diagnosis, routine radiological & Electrophysiological investigations & arrive at appropriate functional diagnosis with clinical reasoning.
CO 2	Correlate the same with radiological, electrophysiological, biochemical/ hematological investigations as applicable & arrive at the appropriate Physiotherapy diagnosis with skillful evaluation of structure and function with clinical reasoning for lower quadrant & lower spine dysfunction.
CO 3	Discuss the clinical manifestations, complications & management of congenital and acquired deformities
CO 4	Perform a clinical examination & interpret findings of preoperative cases & post- operative cases

Course Content

1. Brief review of the Orthopaedic conditions and various physiotherapeutic modalities, aim, objectives and techniques of physiotherapy should be taught.
2. Physiotherapy management of Fractures, and dislocations- Upper extremity, lower Extremity and spine.
3. Physiotherapy management of Fracture, and dislocation complications.
4. Physiotherapy management of fracture of spine with paraplegia and without neurodeficit.
5. Physiotherapy management of soft tissue injuries of Upper extremity, lower Extremity.
6. Physiotherapy in relation to amputation
7. Physiotherapy management of Common congenital and acquired deformities of foot, knee, hip, shoulder, elbow and wrist
8. Physiotherapy in various acquired & congenital spinal deformities (scoliosis, lordosis, kyphosis)

Name of the Program- Bachelor of Physiotherapy

Placement of the Course- BPT Semester V

Name of the Course	**General Medicine**
Course Code	**BPT23S503T**
Course Description	**Core Theory**
Credit per Semester	**4 Credits**
Hours per Semester	**60 Hours**

Course Learning Outcomes: The student will be able to	
CO 1	Explain etiology, pathophysiology, clinical signs, symptoms & management of pulmonary and general medical conditions.
CO 2	Acquire knowledge for drugs used in each condition to understand its effect and its medical uses.
CO 3	Describe the Pathophysiology, Signs & Symptoms, Clinical Features, Examination & Management of Common Skin Conditions.
CO 4	Describe Etiology, Pathophysiology, Signs &Symptoms &Management of the various Endocrinal, Metabolic, Geriatric& Nutrition Deficiency conditions.
CO 5	Describe Etiology, Pathophysiology, Signs & Symptoms, Clinical, Evaluation& Management of the various Rheumatological and Respiratory Conditions.
CO6	To Know The importance of First aid in Physiotherapy and utilize the nursing process to provide individualized care to clients and significant support persons throughout the lifespan

Course Content

1. Introduction of Medicine.
2. Diseases of Respiratory System ,Physiology, clinical presentation in relation to diseases, Chronic obstructive Pulmonary Disease, Bronchial asthma, Pneumonia , Bronchiactesis, Pleural effusion & Emphysema, thoracic , Pneumothorax etc
3. Diseases of Kidney-Physiology, clinical presentation in relation to ARF, CRF
4. Hematological Diseases.-Anemia, Physiology, clinical presentation in relation to Hemophilia
5. Endocrine & Metabolic Diseases, Diabetes mellitus, Cushing syndrome, Addison's disease., Vit. D & Calcium metabolism, Parathyroid gland disorders
6. Nutritional Diseases-Physiology, clinical presentation in relation to Obesity

First Aid & Basic Nursing-

Module I - • Instrumentation used in First Aid (First Aid kit) & Examination of Vital Signs, First aid of Emergencies (Snake & animal bites, Poisoning, Electric shock, Hypovolemic Shock, Traumatic accidents, Cardiac arrest, Burns, spinal cord injuries & fractures).

Module II- • Introduction and nursing principles of Nursing, Bandaging extremities: triangular bandages & their application Environment safety.

• Bed Rest & Mobility - Bed making (Prone, lateral dorsal, dorsal recumbent, fowler's position , Comfort measures, Aid to rest & sleeps, Transfers, Basic turns , Lifting patients up in the bed : transferring from bed to wheelchair, Transferring from bed to stretcher) .

Module III - • Observation & Nourishment - Providing for patients elimination , Giving & taking bed pan, urinal: observation of stools, urine

• Observation of sputum - Understand use & case of catheters

• Methods of giving nourishment - Feeding tube, feeding drips, transfusions

• Care of rubber goods, Observation, reporting & recording temperature, respiration & pulse simple aseptic techniques, sterilisation & disinfection, Surgical dressing, Parential administer of medicine

Reference Books:

• Wellness and Physical Therapy, Fair, S.E. 1st Edition

• Primary Care for the PT: Exam & Triage Boissonnault, W. 2nd Edition , Guidelines for Exercise Testing & Prescription, ACSM, 9th Edition

• Resource Manual for Guidelines for Exercise Testing and Prescription, ACSM, 7th Edition

• Ewles, L. & Simnett, I. (2003) , Promoting Health. A practical guide. (5th ed). Ediburgh Ballière Tindall.

• First aid in emergency – St. John. Ambulance Association.

• Surgical & Medical Procedures for Nurses & Paramedical staff – Nathan.

• First aid & management of general injuries & common ailments-Gupta & Gupta.

Name of the Program- Bachelor of Physiotherapy

Placement of the Course- BPT Semester V

Name of the Course	**Disability Prevention & Rehabilitation I**
Course Code	**BPT23S504T**
Course Description	**Core Theory & Practical**
Credit per Semester	**4 Credits**
Hours per Semester	**60 Hours**

Course Learning Outcomes: The student will be able to	
CO 1	To make understanding easier about community health in various perspectives .
CO 2	To work for overall prevention of disease.
CO 3	Evaluate the scope of rehabilitation.

Course Content

1. Introduction to Rehabilitation medicine
2. Rehabilitation Team & its members, their role.
3. Definition concerned in the phases of disability process, explanation of its aims & principles. Scope of rehabilitation.
4. Definition concerned with the causes of Impairment, Functional limitation and Disability
5. Disability evaluation, Prevention, Limitation & Rehabilitation.
6. Community & Rehabilitation including C.B.R. Advantages of C.B.R. over I.B.R.
7. Contribution of Social Worker towards rehabilitation
8. Health care system & Present Rehabilitation Services
9. Legislations for rehabilitation services for the Disabled and P.W.D. acts & Recent Amendments.
10. Principles of Communication & its problems and management.
11. Behavioral problems in the Disabled its principle of management.
12. Architectural barriers possible modifications in relation to different disabled conditions.
13. Achieving functional independence

Practical demonstration:-

Practical Demonstration of :-

-Upper & lower extremity orthosis & spinal orthosis.
-Prescription of foot wear modification
-Wheel chair-component, assessment of wheelchair , measurement of wheelchair
-Upper & lower extremity Prosthesis & components.
-Functional assessment scales.

Name of the Program- Bachelor of Physiotherapy

Placement of the Course- BPT Semester V

Name of the Course	**Hand Rehabilitation**
Course Code	**BPT23S505T**
Course Description	**Elective Course**
Credit per Semester	**2 Credits**
Hours per Semester	**45 Hours**

Course Learning Outcomes: The student will be able to	
CO 1	Identify, evaluate, analyze and discuss primary and secondary dysfunction related to Wrist and hand complex based on kinesiological and pathophysiological principles
CO 2	Apply theoretical basis of physiological effects and best available evidence on effectiveness, efficacy and safe application of management guidelines
CO 3	Prescribe and train for appropriate prosthesis and orthosis based on dysfunction of wrist and hand complex
CO 4	Acquire ethical skills by demonstrating safe and effective performance of physical handling techniques taking into account patient's clinical condition, need for privacy,resources available and environment

Course Content

1.Anatomy of Wrist and Hand Complex

a) Basic Structure
b) Bony Landmarks
c) Muscles
d) Ligaments
e) Nerve supply
f) Blood supply
g) Surface Anatomy
h) Applied Anatomy

2.Clinical Biomechanics

a) Biomechanics of Wrist and Hand Complex
b) Kinetics
c) Kinematics
d) Pathomechanics
e) Function and Architecture of Hand
f) Functional positions of wrist and hand

3.Examination

a) Specific History taking
b) Differential Diagnosis based on History
c) Screening for Red and Yellow flags
d) Assessment
e) Neurological Screening
f) Special tests

4.Traumatic Injuries of Hand

a) Flexor tendon injuries
b) Extensor tendon injuries
c) Crush Injury
d) Fractures around the Wrist and Hand complex

5.Overuse Injuries

a) Carpal tunnel syndrome
b) de Quervain's tenosynovitis

6. Special Considerations

a) Complex Regional Pain Syndrome(CRPS)
b) Rheumatoid hand
c) Dupuytren's Contracture

Practical : Case presentations, evaluation and management of conditions mentioned in theory.

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Placement of the Course- BPT Semester V

Name of the Course	**Sociology Theory**
Course Code	**BPT23S506T**
Course Description	**Core Theory**
Credit per Semester	**2 Credits**
Hours per Semester	**30 Hours**

Course Learning Outcomes: The student will be able to	
CO 1	Describe social factors affecting health, influence of family, social groups ,culture, community and governmental policies on health perspectives
CO 2	Identify vulnerable population, role of social support systems and NGOs, legislations related to disability and role of medical social worker.
CO 3	Describe the interaction between social problems and public health.

Course Content

1. Introduction:-Definition of Sociology. Sociology as a science, uses of the study of Sociology, application of knowledge of sociology in physiotherapy.

2.Sociology and health:-Social factors affecting 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

3. Socialization:-
Meaning of socialization, influence of social factors on personality, socialization in hospital and socialization in rehabilitation of patients.

4. 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 setting.

5. Family:-
Influence of family on human personality, discussion of changes in the functions of a

family, influence of family on the individual's rehabilitation.

6. Social problems of the disabled:-

Consequences of the following social problems in relation to sickness and disability, remedies to prevent these problems:

a) Population explosion
b) Poverty and unemployment
c) Beggary
d) Juvenile delinquency
e) Prostitution
f) Alcoholism
g) Problems of women in employment

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Placement of the Course- BPT Semester V

Name of the Course	**Clinical Orthopedics-I**
Course Code	**BPT23S501P**
Course Description	**Core Practical**
Credit per Semester	**2 Credits**
Hours per Semester	**60 Hours**

Course Learning Outcomes: The student will be able to	
CO 1	Gain the skill of clinical examination; apply special tests & interpretation of the preoperative old cases & all the post-operative cases.
CO 2	Able to read & interpret salient features of the X-ray of the Spine & Extremities and correlate the radiological findings with the clinical findings.
CO 3	Able to interpret Pathological / Biochemical studies pertaining to Orthopaedic conditions.

Course Content

1. Case assessment & presentation of various orthopedic conditions mentioned in theory.
2. Exposure to various orthopedics techniques & procedures mentioned in theory.

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Placement of the Course- BPT Semester V

Name of the Course	**Physiotherapy in Orthopedic Condition Practical**
Course Code	**BPT23S502P**
Course Description	**Core Practical**
Credit per Semester	**2 Credits**
Hours per Semester	**60 Hours**

Course Learning Outcomes: The student will be able to	
CO 1	Explain the, etiology, pathophysiology, clinical manifestations & medical / surgical management of various traumatic & non-traumatic (degenerative, inflammatory, infective, autoimmune) musculoskeletal conditions.
CO 2	interpret investigations such as X-ray of spine & extremities and correlate radiological findings with clinical findings

Course Content

1. Various techniques of Physiotherapy mentioned in theory in various condition/diseases should be demonstrated and practiced by the students.
2. Assessment, goal planning and management orthopedics conditions mentioned in theory.
3. General viva.
4. Case Study

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Placement of the Course- BPT Semester VI

Name of the Course	**Clinical Orthopedics-II**
Course Code	**BPT23S601T**
Course Description	**Core Theory**
Credit per Semester	**4 Credits**
Hours per Semester	**60 Hours**

Course Learning Outcomes: The student will be able to	
CO 1	Provide the knowledge about orthopaedic conditions the therapist would encounter in their practice.
CO 2	demonstrate an understanding of orthopaedic conditions causing disability, list the etiology, clinical features and methods of investigations and management.
CO 3	Perform a clinical examination & interpret finding of preoperative cold cases & post-operative cases.
CO 4	Read & interpret salient features of X-ray of the spine & extremities and Correlate with the clinical findings and also pathological/ biochemical studies pertaining to Orthopaedic Conditions

Course Content

1. Bone and joint tumors- classification, clinical features and management of benign and malignant bone and joint tumors.
2. Peripheral nerve injuries-their management.
3. Trauma and trauma care.
4. Reconstructive surgeries for rehabilitation of Poliomyelitis, Leprosy, crush injuries
5. Principle of Tendon transfer and its procedure.
6. Pediatric musculoskeletal conditions and management.
7. Neck and Low back ache, Sciatica, PIVD, brachial neuralgia etc
8. Sports injuries and its management.
9. Radiological examination.

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Placement of the Course- BPT Semester VI

Name of the Course	**Physiotherapy in Orthopedic Condition II**
Course Code	**BPT23S602T**
Course Description	**Core Theory**
Credit per Semester	**4 Credits**
Hours per Semester	**60 Hours**

Course Learning Outcomes: The student will be able to	
CO 1	Identify Disability due to musculoskeletal dysfunction , set treatment goals and apply these skills gained in exercise therapy , electro therapy and massage in clinical situation to restore musculoskeletal function.
CO 2	Integrate the knowledge gain by the students in clinical Orthopedics with skills gain to apply these in clinical situation of dysfunctions and musculoskeletal pathology.
CO 3	Know about the basics of traumatology and need of post -op. physiotherapy. Like Tendon transfer
CO 4	Learn about the basics of degenerative joints changes and there effect on the QOL of the patient and role of physiotherapy in improving QOL.

Course Content

1. Physiotherapy in Arthritis – Osteoarthritis, Rheumatoid arthritis, cervical and lumbar spondylosis, Ankylosing spondylitis, canal stenosis.
2. Physiotherapy in Infective conditions and lesion of joints and bones- Osteomyelitis, tuberculosis, pyogenic infection., T.B. Joints,
3. Physiotherapy in Bone and joint tumors- classification, clinical features and management of benign and malignant bone and joint tumors.
4. Physiotherapy in relation to Arthoplasty & Osteotomy.
5. Physiotherapy in Reconstructive surgeries of Poliomyelitis, Leprosy, crush injuries
6. Physiotherapy in relation to Tendon Transfer.
7. Physiotherapy in Peripheral nerve injury, plexus injury etc.
8. Fracture cast, bracing and mobilization

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Placement of the Course- BPT Semester VI

Name of the Course	**Paediatrics**
Course Code	**BPT23S603T**
Course Description	**Core Theory**
Credit per Semester	**4 Credits**
Hours per Semester	**60 Hours**

Course Learning Outcomes: The student will be able to	
CO 1	Know how to define various terms related to pediatrics .
CO 2	Understand various condition related to pediatrics along with there clinical features ,investigations, diagnosis, and treatment
CO 3	Able to understand the normal child development ,examine primitive reflexes.

Course Content

1. Describe growth and development of child from birth to 12 year including physical, social, adaptive development.
2. Prevention: Appropriate management of high risk pregnancies, prevention of neonatal and postnatal infections, metabolic problems
3. Outline the immunization schedule for children.
4. Cerebral palsy: Define and briefly outline etiology of prenatal, per-natal and postnatal causes, briefly mention pathogenesis, types of cerebral palsy (Classification), findings on examination, general examination of C.N.S, Musculoskeletal and respiratory system.
5. Briefly outline associated defects: Mental retardation, microcephaly, blindness, hearing and speech impairment, squint and convulsions.
6. Still's disease: Classification, pathology in brief, physical findings,
course & prognosis. Outline treatment, prevention and correction of deformity.
7. Normal diet of new born and child: List dietary calorie, fat, protein, mineral and vitamin requirement in a normal child and in a child with malnutrition.
8. Lung infections: Physiology, clinical presentation in relation to bronchiectasis, lung abscess and bronchial asthma, cystic fibrosis
9. Intensive pediatric care & Physiology, clinical presentation.

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Placement of the Course- BPT Semester VI

Name of the Course	**Disability Prevention & Rehabilitation II**
Course Code	**BPT23S604T**
Course Description	**Core Theory & Practical**
Credit per Semester	**4 Credits**
Hours per Semester	**90 Hours**

Course Learning Outcomes: The student will be able to	
CO 1	Describe physiological changes in geriatrics with multisystem review to evaluate and plan rehabilitation program
CO 2	Identify environmental stress factors in industries, plan injury prevention program, physiological restoration, and rehabilitation for effective return to work management.
CO 3	Prescribe and train for appropriate prosthesis and orthosis based on dysfunction of wrist and hand complex
CO 4	Acquire ethical skills by demonstrating safe and effective performance of physical handling techniques taking into account patient's clinical condition, need for privacy, resources available and environment

Course Content

1. Occupational rehabilitation
2. Concepts in geriatric rehabilitation
3. Visual disability: Definition and classification, mobility techniques, communication skills, prevention of blindness.
4. Socio-economic Rehabilitation:

a) Outline of Social and Vocational Counselling
b) Vocational evaluation & Goals for disabled, role of Vocational Counselor.
c) Outline the social implications of disability for the individual and for the community
d) Pre-vocational Evaluation & Role of V.C. Govt. & NGO
e) Discuss methods and team involvement in pre-vocational evaluation and training.

5. Functional Assessment scales & its clinical uses eg, functional independent measure, Sylvan index, PEDI, Gross Motor Function, VAS, ASIA, BBS, Modified Ashworth score.
6. Ethics

a) The implications of and confirmation to the roles of professional conduct

b) Legal responsibility for their actions in the professional context and understanding liability and obligations in case of medico legal action
c) A wider knowledge of ethics relating to current social and medical policy in the provision of health care
7. Ergonomics
8. Prosthesis and Orthosis
a) Definition and Basic Principles
b) Designing and Construction of Upper & Lower extremity Orthosis & Spinal Orthosis.
c) Prescription and design of footwear & its modification
d) Wheel Chair: Components of wheel chair; assessment of wheel chair; measurement for wheel chair; features of sports wheel chair.
e) Ambulatory Aids & Assistive Devices
f) Measurement and P.O.P. cast techniques

Practical demonstration:-

Practical Demonstration of :-

- Upper & lower extremity orthosis & spinal orthosis.
- Prescription of foot wear modification
- Wheel chair-component, assessment of wheelchair , measurement of wheelchair
- Upper & lower extremity Prosthesis & components.
- Functional assessment scales.

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Placement of the Course- BPT Semester VI

Name of the Course	**Vestibular Rehabilitation**
Course Code	**BPT23S605T**
Course Description	**Elective Course**
Credit per Semester	**2 Credits**
Hours per Semester	**45 Hours**

Course Learning Outcomes: The student will be able to	
CO 1	Explain anatomy and physiology of the vestibular system
CO 2	Explain clinical significance of diagnostic studies, physical assessment and clinical History
CO 3	Explain signs, symptoms and co-existing problems of the patient
CO 4	Describe disorders that may affect the vestibular system but are not appropriate for treatment by physical therapists
CO 5	Perform clinical evaluation and plan rationale for appropriate evaluation procedures
CO 6	Apply therapeutic measures to treat vestibular dysfunction
CO 7	Communicate with the patient and care-giver regarding precautions to be followed following therapy, preventive measures

Course Content

1 Anatomy & Physiology of Vestibular System
2 Role of vestibular system in postural control
3 Assessment of Balance and vestibular ocular reflex
4 Balance and Gait Assessment
5 Oculomotor Examination
6 Assessment of Subjective Complaints
7 Vestibular Function Tests: Caloric & Vestibular Evoked Potential
8 Benign Paroxysmal Positional Vertigo, Unilateral Vestibular Loss, Bilateral Vestibular Disorder– Assessment and management of Posterior Canal, Anterior Canal, Horizontal Canal
9 Treatment theory, goals of management and progression
10 Practical: Assessment and management of disorder

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Placement of the Course- BPT Semester VI

Name of the Course	**Psychology & Psychiatry Theory**
Course Code	**BPT23S606T**
Course Description	**Core Theory**
Credit per Semester	**2 Credits**
Hours per Semester	**30 Hours**

Course Learning Outcomes: The student will be able to	
CO 1	Define the term Psychology & its importance in health delivery system, explain psychological maturation during human development & growth & alterations during aging process.
CO 2	Explain the importance of psychological status of the person in health & disease; environmental & emotional influence on the mind & personality.
CO 3	Apply skills required for good interpersonal communication.
CO 4	Describe various psychiatric disorders with special emphasis to movement / Pain & ADL.
CO 5	Describe pathological & etiological factors, signs /symptoms & management of various psychiatric conditions.

Course Content

Psychology:

a) General Psychology:-

1 Definition of Psychology

i) Science of mind, consciousness and behavior

ii) Scope and branches of Psychology

2 Methods of Introspection, observation and experimentation

3 Hereditary and Environment

i) Relative importance of heredity and environment

ii) Physical characteristics intelligence and personality.

iii) Nature vs. nurture controversy

4 Learning
Types of Learning
i) Trial and error
ii) Classical Learning
iii) Instrumental learning
iv) Insight for Learning

5 Memory
i) Steps of memory
ii) Measurement of memory
iii) Causes of forgetting
iv) Concept of STM and LTM

6 Perceptual Process
i) Nature of perceptual process
ii) Structural and functional factors in perception
iii) Illusion and Hallucination

7 Emotion
i) Emotion and feeling
ii) Physiological changes
iii) Theories of emotion (James-Lange and Eonnon-Bird)

8 Motivation
i) Motive: need and Drive
ii) Types of motive: Physiological, Psychological and Social

9 Intelligence
Definition: theory and assessment

10 Personality: Definition: Types and measurements

11 Child Psychology
i) Concept of child Psychology
(a) Meaning: nature and subject matter of child Psychology
(b) Practical importance of studying child Psychology for rehabilitation professionals
ii) Methods of studying child development
(a) Baby Biography
(b) Case History
(c) Behavior rating
iii) Applied Psychology

Rehabilitation Psychology:
Interpersonal Relationships, Family & Social relationships, acceptance about the disability – its outcome in relation to different diagnostic categories psychological aspects of multiple handicapped, contribution of psychology in Total Rehab.

2. Psychiatry

(1) Definition/criteria of Normality and Abnormality and factor contributing to normal mental health.
(2) Neurotic disorders.
(3) Psychotic disorders.
(4) Psychosomatic disorders.
(5) Organic mental disorders.
(6) Substances abuse disorders
(7) Problems in adjustment in old age.
(8) Psychotherapy
(9) Child psychiatry

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Placement of the Course- BPT Semester VI

Name of the Course	**Clinical Orthopedics II**
Course Code	**BPT23S601P**
Course Description	**Practical**
Credit per Semester	**2 Credits**
Hours per Semester	**60 Hours**

Course Learning Outcomes: The student will be able to	
CO 1	Gain the skill of clinical examination; apply special tests & interpretation of the preoperative old cases & all the post-operative cases.
CO 2	Able to read & interpret salient features of the X-ray of the Spine & Extremities and correlate the radiological findings with the clinical findings.
CO 3	Able to interpret Pathological / Biochemical studies pertaining to Orthopaedic conditions.

Course Content

1. Case assessment & presentation of various Orthopedic conditions mentioned in theory.
2. Exposure to various orthopedics techniques & procedures.

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Placement of the Course- BPT Semester VI

Name of the Course	**Physiotherapy in Orthopedic Conditions II**
Course Code	**BPT23S602P**
Course Description	**Core Practical**
Credit per Semester	**2 Credits**
Hours per Semester	**60 Hours**

Course Learning Outcomes: The student will be able to	
CO 1	Manage different soft tissue conditions, degenerative condition by Appling physiotherapy techniques.
CO 2	Different Physiotherapeutic Techniques and there applications to manage the Post - op. Complications in patients.

Course Content

1. Various techniques of Physiotherapy mentioned in theory in various condition/diseases should be demonstrated and practiced by the students.
2. Assessment, goal planning and management of orthopedics conditions mentioned in theory.
3. General viva.
4. Case Study

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Placement of the Course- BPT Semester VII

Name of the Course	**Neurology & Neurosurgery**
Course Code	**BPT23S701T**
Course Description	**Core Theory**
Credit per Semester	**3 Credits**
Hours per Semester	**45 Hours**

Course Learning Outcomes: The student will be able to	
CO 1	Development of clinical problem solving skills .
CO 2	describe neuro-anatomy, neurophysiology and medical management of neurological conditions
CO 3	Acquisition of the clinical application of basic knowledge of the nervous system .
CO 4	Development of communication skill that will facilitate the clinical interaction with patients with neurological disorders and there family.

Course Content

Neurology:

1. General principles of neuroanatomy and neurophysiology.
2. Diagnosis, assessment and principles of management of neurological patient. Cerebral vascular accident
3. Acute infection of CNS- Pyogenic meningitis and sequelae, TB infection of CNS, polio
4. Parkinsonism and other extra-pyramidal disorder.
5. Cerebral palsy
6. Seizure disorders.
7. MS & other demyelinating disease
8. ALS (Amytrophic lateral sclerosis) and other Motor neuron diseases.
9. Diseases of Peripheral Nerves, cranial nerves, Myasthenia Gravis
10. Diseases of muscles (polymyositis, muscular dystrophy)
11. Cervical and lumbar spondylosis and disc prolapse

Neurosurgery:

1. Head Injury – Causes and mechanism of head injury subdural, epidural and intracranial bleeding, types of neurological disorders following head injury and their complete management.

2. Tumors of neurological system management.
3. Cranial & Spinal cord lesion management including Paraplegia, Hemiplegia, quadriplegia management.
4. Neurogenic bladder-Classification-management
5. Pediatric condition- Spina bifida, meningomyelocele: Outline development, clinical features lower limbs, bladder and bowel control, complications UTI & hydrocephalus
6. Peripheral nerve lesions, management.
7. Surgical management of brain disease and CVA.
8. Neuro-surgical Intensive care

Name of the Program- Bachelor of Physiotherapy

Placement of the Course- BPT Semester VII

Name of the Course	**Physiotherapy in Neurological & Neurosurgical Condition-I Theory**
Course Code	**BPT23S702T**
Course Description	**Core Theory**
Credit per Semester	**3 Credits**
Hours per Semester	**45 Hours**

Course Learning Outcomes: The student will be able to	
CO 1	Describe neuro-anatomy, neurophysiology and physiotherapy management of neurological Conditions
CO 2	Describe various physiotherapy treatment in neurological and neurosurgical conditions

Course Content

A. Neuroanatomy
Review the basic anatomy of the brain and spinal cord including: Blood supply of the brain and spinal cord, anatomy of the visual pathway, connections of the cerebellum and extra-pyramidal system, relationship of the spinal cord segments, long tracts of the spinal cord, the brachial and lumbar plexuses and cranial nerves.

B. Neurophysiology
Review in brief the Neurophysiological basis of: tone and disorders of tone and posture, bladder control, muscle contraction and movement and pain.

C. Clinical Features & Management
1. Briefly outline the clinical features and PT management of the following Neurological Disorders:
a. Congenital and childhood disorders:- Hydrocephalus, Spina Bifida, Carnio vertebral junction anomalies, Arnold Chiari malformation, Dandy Walker Syndrome etc.

b. Cerebrovascular accidents:-
i. General classification, thrombotic, embolic, haemorrhagic inflammatory strokes.
ii. Gross localization and sequelae.
iii. Detailed rehabilitative programme.
c. Trauma – broad localization, first aid and PT management of

i. Head injury
ii. Spinal cord injury

d. Diseases of the spinal cord:-
i. Syringomyelia
ii. Tumors
iii. Spinal arachnoiditis
iv. Transverse myelitis
v. T.B. Spine

e. Demyelinating diseases (Central and peripheral), Multiple sclerosis

f. Degenerative disorders:-
i. Parkinson's disease
ii. Dementia

g. Infections:-
i. Meningitis and encephalitis
ii. Tuberculosis infection of central nervous system.
iii. Poliomyelitis
iv. Brain abscess
v. Tabes Dorsalis
vi. Acute disseminated encephalomyelitis

Name of the Program- Bachelor of Physiotherapy

Placement of the Course- BPT Semester VII

Name of the Course	**Physiotherapy in Medical Condition**
Course Code	**BPT23S703T**
Course Description	**Core Theory**
Credit per Semester	**3 Credits**
Hours per Semester	**45 Hours**

Course Learning Outcomes: The student will be able to	
CO 1	Describe the etiology , epidemiology, pathogenesis, and physiotherapy management of pulmonary and cardiovascular disorders.
CO 2	To understand the different type of deficiency disorders, skin conditions, and their respective physiotherapy management.
CO3	Identify, discuss & analyze cardiovascular & pulmonary dysfunction, based on Patho-physiological principles & arrive at the appropriate functional diagnosis.

Course Content

General Medicine

1. Introduction: Brief review of the following medical condition and various modalities of physiotherapy, aims, mean and techniques of physiotherapy should be taught.
2. Physiotherapy in relation to:

a. Edema- classification and management
b) Skin Conditions - Acne, psoriasis, alopecia, leukoderma, leprosy, STDs
c) Deficiency disease- Rickets, Vitamin Deficiency Syndrome, osteoporosis, osteomalacia etc
d) Obesity
e) Non-articular rheumatism
f) Connective tissue disorders

Respiratory

1. Review of mechanism of normal respiration.
2. Chest examination including auscultation.
3. Pulmonary function testing
4. Physiotherapy management of

a) COPD, asthma, lung abscess, bronchiectasis, emphysema etc
b) Pleurisy, empyema, pneumonia etc

c) Bacterial diseases
d) Paralysis of diaphragm and vocal cords
e) Chest deformities

Cardio-Vascular:-Congestive Heart Failure, Myocardial Infarction & Peripheral vascular diseases, gangrene, DVT and PE

Name of the Program- Bachelor of Physiotherapy

Placement of the Course- BPT Semester VII

Name of the Course	**Exercise physiology & Sports Physioherapy I**
Course Code	**BPT23S704T**
Course Description	**Core Theory**
Credit per Semester	**3 Credits**
Hours per Semester	**45 Hours**

Course Learning Outcomes: The student will be able to	
CO 1	Describe aerobic and anaerobic energy system and various adaptations the body experiences post exercise and detraining effects on body's various systems when exercises are stopped.
CO 2	Describe various Sports specific and Cross training
CO 3	Assess Body composition using various tools.
CO 4	Conduct pre-participation examination, assessment, diagnosis and management of various musculoskeletal sports injuries.

Course Content

1. Pre-exercise evaluation

2. Diet and nutrition, ergogenic aids

3. Measurement of fitness components and sports skills
   a) Measurement of muscular strength
   b) Measurement of muscular endurance
   c) Measurement of flexibility
   d) Determination exercise endurance

4. Physiological effects of exercise on body systems
   a) Muscular system
   b) Endocrine system

c) Cardio-respiratory system
d) Nervous system

5. Sports injuries
   a) Cervical whiplash injuries, SI joint dysfunction
   b) Hip-muscle strain, piriformis syndrome, ITB syndrome, osteitis pubis
   c) Knee-menisci, cruciate, collateral ligaments, osteochondritis, chondromalacia patellae, swimmers knee, patella-femoral pain syndrome
   d) Leg & ankle-shin splint, Achilles tendonitis & rupture, TA bursitis, ankle sprain, plantar fasciitis, turf toe syndrome
   e) helmet compression syndrome

Name of the Program- Bachelor of Physiotherapy

Placement of the Course- BPT Semester VII

Name of the Course	**Basic Life Support**
Course Code	**BPT23S705T**
Course Description	**Elective Course**
Credit per Semester	**2 Credits**
Hours per Semester	**45 Hours**

Course Learning Outcomes: The student will be able to	
CO 1	Learn basic life support training and skill which will be helpful in every aspect of life
CO 2	Recognize several life threatening emergencies and to act precisely to save life.

Course Content

- Introduction to Basic Life Support (BLS)
- Adult BLS and Techniques of CPR
- AED Device in adults
- Pediatric Basic Life Support and its techniques
- Infant & Neonatal Resuscitation
- CPR in Covid Areas
- Foreign Body Removal Technique

Practical-:

- Demonstration of BLS in adults, pediatrics and infants.

Name of the Program- Bachelor of Physiotherapy

Placement of the Course- BPT Semester VII

Name of the Course	**Neurodevelopmental Techniques**
Course Code	**BPT23S706T**
Course Description	**Elective Course**
Credit per Semester	**2 Credits**
Hours per Semester	**60 Hours**

Course Learning Outcomes: The student will be able to	
CO 1	To apply the knowledge of theories of development as a basis for developmental therapy for children and young adults with disability.
CO 2	To develop observational skills of motor and functional abilities/disabilities relative to their clients' abilities.
CO 3	To demonstrate techniques for physical and functional assessment and clinical measurements using NDT approach
CO 4	To be able to identify systems impaired underlying developmental difficulty leading to delayed physical and functional milestones and offer preventive advice.
CO 5	To provide functional therapeutic skills in developing effective intervention strategies using NDT approach based on developmental principles
CO 6	To effectively plan and implement therapeutic Intervention strategies for physical and functional development and management in the contexts of the home and the community
CO 7	To Understand the process and be able to perform documentation of progress based on functional goals

Course Content

1. Principles of Growth and Development
2. Development from 0 – 6 months of age, 6-12 months of age, 12-18 months of age, 18-24 months of age and 2 years onwards with emphasis on Motor & Sensory system.
3. Principles of Neuro developmental Therapy
4. Neuro developmental Treatment Practice and ICF Model
5. NDT approach based evaluation based on various age groups

6. **Goal setting and documentation**

7. **Treatment skills**
    - Preparing the client
    - Head control
    - Trunk control
    - Transitions in and out from supine to sit, sit to stand, quadruped, vaulting, kneeling, standing and gait

8. **Case based demonstration**

Name of the Program- Bachelor of Physiotherapy

Placement of the Course- BPT Semester VII

Name of the Course	**Physiotherapy in Neurological & Neurosurgical Condition-I Practical**
Course Code	**BPT23S701P**
Course Description	**Core Practical**
Credit per Semester	**3 Credits**
Hours per Semester	**90 Hours**

Course Learning Outcomes: The student will be able to	
CO 1	Demonstrate proficiency at performing an appropriately focused and reliable neurological examination including cranial nerves, motor function, sensation, reflexes, coordination and gait.
CO 2	Demonstrate various physiotherapy approaches in neurological and neurosurgical conditions

Course Content

1 Various technique of Physiotherapy as mentioned in theory in various conditions/diseases should be demonstrated and practiced by the students
2 Assessment planning and management of Neurological conditions
3 General viva
4 Case Study

Name of the Program- Bachelor of Physiotherapy

Placement of the Course- BPT Semester VII

Name of the Course	**Physiotherapy in Medical Condition- Practical**
Course Code	**BPT23S702P**
Course Description	**Core Practical**
Credit per Semester	**3 Credits**
Hours per Semester	**90 Hours**

Course Learning Outcomes: The student will be able to	
CO 1	Utilize the skill to deliver cardiac rehabilitation
CO 2	Interpret radiological and biochemical investigations
CO 3	Demonstrate the skill of basic Cardiopulmonary resuscitation

Course Content

1. Various techniques of Physiotherapy as mentioned in theory in various conditions/diseases should be demonstrated and practiced by the students.
2. Assessment planning and management of Surgical conditions
3. General viva.
4. Case Study

Name of the Program- Bachelor of Physiotherapy

Placement of the Course- BPT Semester VIII

Name of the Course	**General Surgery**
Course Code	**BPT23S801T**
Course Description	**Core Theory**
Credit per Semester	**3 Credits**
Hours per Semester	**45 Hours**

Course Learning Outcomes: The student will be able to	
CO 1	The student will have a general understanding of the surgical conditions the therapist would encounter in their practice
CO 2	the student will be able to list the indications for surgery, etiology, clinical features and surgical methods for various conditions.

Course Content

1. General Surgery
(1) Principles of Pre and postoperative management of surgical patients.
(2) Shock - definition, types, clinical features, pathology and management
(3) Hemorrhage- common sites, complication, clinical features and management.
(4) Surgical intensive care.
(5) Description of events frequently accompanying in general anesthesia, blood transfusion and physiological response of the body to surgery.
(6) Abdominal surgery: Incisions, complications and management of various abdominal surgeries.
(7) Wounds and wound infections, Sinuses and ulcers.
(8) Burns: Degrees of burns and, management and reconstructive surgery following burns and complications of Burns.

Name of the Program- Bachelor of Physiotherapy

Placement of the Course- BPT Semester VIII

Name of the Course	**Physiotherapy in Neurological & Neurosurgical Condition-II**
Course Code	**BPT23S802T**
Course Description	**Core Theory**
Credit per Semester	**3 Credits**
Hours per Semester	**45 Hours**

Course Learning Outcomes: The student will be able to	
CO 1	Describe different neuro-therapeutic approaches
CO 2	Describe various physiotherapy approaches in neurological and neurosurgical conditions
CO 3	Describe various physiotherapy approaches in pediatric and geriatric conditions

Course Content

1.Clinical Features & Management

1. Diseases of the muscle including myopathies: Classification, signs, symptoms, progression and management.
2. Epilepsy: Definition, classification and management
3. Myasthenia Gravis: Definition, course and management
4. Intracranial tumors: Broad classification, signs and symptoms.
5. Motor neuron disease
6. Extra pyramidal tract lesions
7. Ataxia- sensory and cerebellar
8. Polyneuropathy
9. Bells Palsy, facial palsy and Trigeminal Neuralgia.
10. Disc Prolapse
11. Herniation of Brain
12. Cerebral Palsy

2.Physiotherapeutic Approaches applied in management of neurological conditions
(Bobath, Brunnstorm, Roods, PNF etc) including concepts in neuroplasticity.
Wheel Chairs measurement & transfer

3. Paediatrics
Common congenital and acquired musculoskeletal, neurological, hereditary, metabolic disorders

4. Geriatrics
Identification, assessment and management of geriatric musculoskeletal, cardiopulmonary, neurological, somato-sensory; injuries and accidents specifically to aged.

Name of the Program- Bachelor of Physiotherapy

Placement of the Course- BPT Semester VIII

Name of the Course	**Physiotherapy in Surgical Conditions**
Course Code	**BPT23S803T**
Course Description	**Core Theory**
Credit per Semester	**3 Credits**
Hours per Semester	**45 Hours**

Course Learning Outcomes: The student will be able to	
CO 1	Explain physiotherapeutic measures with appropriate clinical reasoning to improve general surgical conditions including physiotherapy for burns.
CO 2	Explain physiotherapeutic measures in Abdominal surgeries
CO 3	Explain physiotherapeutic measures in patients on ventilator

Course Content

Surgical Conditions

1. Brief review of the following surgical conditions and various physiotherapeutic modalities, aims, means and techniques of physiotherapy should be taught.
2. Postural drainage & respiratory physiotherapy in CVTS including principles of cardiac rehabilitation.
3. Physiotherapy in patients on ventilators
4. Pre and Post Operative physiotherapy management of following conditions.
a) Thoractomy, Lobectomy, ThoracoPlasty, Pneumonectomy, Decortication, Nephrectomy, Radical Mastectomy, Abdominal Surgeries
5. Orientation about atelectasis, pneumothorax & other Post operative Complications.
6. Pre and post operative physiotherapy management of paediatric and adult cardiac surgery including vascular surgery
7. Burn & its classification Physiotherapy management.
8. Pre and Postoperative Physiotherapy of skin grafting
9. Physiotherapy of cases after Reconstructive surgery of hand

10. PT in Wound management

Obs. and Gynae.

1. Anatomy of pelvic organs mechanism & physiology of pelvic floor sphincter muscles., Pregnancy – stage of pregnancy – Labour – stage of Labour – delivery, Physiotherapy in PID, diastases recti, incontinence, prolapse uterus, etc.
2. Menopause effects in emotions and musculoskeletal system & common gynecological disorders. Physiotherapy in obstetrics (Antenatal and postnatal exercises)

Name of the Program- Bachelor of Physiotherapy

Placement of the Course- BPT Semester VIII

Name of the Course	**Exercise physiology & Sports Physiotherapy- II**
Course Code	**BPT23S804T**
Course Description	**Core Theory**
Credit per Semester	**3 Credits**
Hours per Semester	**45 Hours**

Course Learning Outcomes: The student will be able to	
CO 1	Select strategies for cure, care & prevention; adopt restorative & rehabilitative measures for maximum possible functional independence of a patient.
CO 2	Describe the principles of training & Rehabilitation in various sports injuries.

Course Content

1. Sports injuries
   a) Shoulder- instability, rotator cuff injury, biceps tendonitis and rupture, and acromioclavicular
   b) joint injuries
   c) Elbow – tennis elbow, golfer's elbow
   d) Wrist and hand-carpal tunnel syndrome, gamekeeper's thumb
   e) Principles of injury prevention

2. Principles of training & Rehabilitation in sports injuries

3. Sports in special age groups:-
   a) Female athletic triad/RED-s
   b) Younger athlete- Musculoskeletal problems, management, children with chronic
   c) illness and nutrition

Older athlete- Physiological changes with aging, benefits, risks of exercise in elderly,

exercise prescription guidelines for elderly

Name of the Program- Bachelor of Physiotherapy

Placement of the Course- BPT Semester VIII

Name of the Course	**Plastic Surgery & Cardiothoracic Surgery- Theory**
Course Code	**BPT23S805T**
Course Description	**Core Theory**
Credit per Semester	**2 Credits**
Hours per Semester	**30 Hours**

Course Learning Outcomes: The student will be able to	
CO 1	Describe procedures followed during various post plastic surgery conditions
CO 2	Describe procedures followed during various pre and post cardiothoracic surgeries

Course Content

1. Plastic Surgery-

Principles of sinuplasty, tendon transplant, cosmetic surgery, types of grafts, surgery of hand with emphasis on management of trauma and leprosy.

2. Cardiothoracic Surgery -

(1) Surgical approach - Incisions for cardiothoracic surgery (Thoracotomy, Thoracoplasty, Lobectomy, Pneumonectomy, Decortication, CABG, Valvular Surgery, Congenital, Heart Disease Surgeries and Surgery for Peripheral Vascular Disease)

(2) Post operative complications & management as mentioned in theory in various conditions

Name of the Program- Bachelor of Physiotherapy

Placement of the Course- BPT Semester VIII

Name of the Course	**Information and Communication Technology in Health Education**
Course Code	**BPT23S806T**
Course Description	**Elective Course**
Credit per Semester	**2 Credits**
Hours per Semester	**30 Hours**

Course Learning Outcomes: The student will be able to	
CO 1	To obtain the basic knowledge on computer, devices used in computers.
CO 2	To know the uses of computers like MS office, Power point Presentations, Excel Documents
CO 3	To know about uses of internet, its advantages in regular updating the knowledge in Occupational therapy profession

Course Content

Introduction

1. Introduction to computers-History of Computer, Generation of Computer, Classification of Computers, Input Devices, Output Devices, Central Processing Unit, Components of CPU, Memory Unit, Peripheral Devices
2. Introduction to M.S. Windows
3. Internet and its applications
4. MGUMST web forum & portal
5. Google Applications
6. Introduction to M.S. Office - Word, Power Point, Excel,
7. Publisher

The Digital Age

Computer and communications, the five operations of a computer-and communication system- input, processing, output, storage and communications as well as the corresponding categories of hardware, five major categories of computers, development I communication

Technology.

Applications Software
Applications and systems software, ethics of copying software, four types of applications software, entertainment education and reference, productivity and business and specialized, key functions of word processors, spreadsheets, database managers, graphics programs and suites, group-ware, and internet web browsers.

Storage Devices
Units of storage capacity, primary and secondary storage, data compression, data storage on diskette, hard disks, optical disks, and magnetic tape and describe the purposes of storage media.

Communications
Usage of communications technology, telephone-related services, online information services, the internet

Multimedia
What is multimedia – Multimedia PC– Multimedia Hardware - Central processor – color display, Multimedia accessories – CD ROM – Digital Audio – Audio speakers
– Digital video– MIDI – deodisc Read/write storage device- Multimedia software

Radio propagation:
Use of computers in physical therapy – Application Packages used in statistical analysis.

Name of the Program- Bachelor of Physiotherapy

Placement of the Course- BPT Semester VIII

Name of the Course	**Physiotherapy in Neurological & Neurosurgical Condition-II Practical**
Course Code	**BPT23S801P**
Course Description	**Core Practical**
Credit per Semester	**2 Credits**
Hours per Semester	**60 Hours**

Course Learning Outcomes: The student will be able to	
CO 1	Demonstration and application of different neuro-therapeutic approaches on subjects.
CO 2	Demonstration and application various physiotherapy approaches in neurological and neurosurgical conditions
CO 3	Demonstration and application various physiotherapy approaches in pediatric and geriatric conditions

Course Content

1 Various technique of Physiotherapy as mentioned in theory in various conditions/diseases should be demonstrated and practiced by the students
2 Assessment planning and management of Neurological conditions
3 General viva
4 Case Study

Name of the Program- Bachelor of Physiotherapy

Placement of the Course- BPT Semester VIII

Name of the Course	**Physiotherapy in Surgical Condition-Practical**
Course Code	**BPT23S802P**
Course Description	**Core Practical**
Credit per Semester	**2 Credits**
Hours per Semester	**60 Hours**

Course Learning Outcomes: The student will be able to	
CO 1	Demonstrate physiotherapeutic measures with appropriate clinical reasoning to improve general surgical & medical condition including physiotherapy for burns.
CO 2	Demonstration and application of physiotherapeutic measures in Abdominal surgeries
CO 3	Demonstration and application of physiotherapeutic measures in patients on ventilator

Course Content

1. Various techniques of Physiotherapy as mentioned in theory in various conditions/diseases should be demonstrated and practiced by the students.
2. Assessment planning and management of Surgical conditions
3. General viva.
4. Case Study

Annexure I

MODEL PAPER

BPT-I Year **HA 1**

(BPT23S101T)

Bachelor of Physiotherapy (BPT) Semester-I
End of Semester Evaluation (Month/Year)

Paper-I

Human Anatomy - I

Time: Three Hour
Maximum Marks :70

Attempt **all** Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) **4 x 10=40**

Q1. Describe classifications of joints and briefly explain the synovial joint?
Q2 Describe the radial nerve under the following headings.
a) Origin and root
b) Course and distribution
c) Supply to the parts
Q3. Describe the shoulder joint under the following headings:
a) Rotator cuff
b) Movements and muscles causing these movements
c) Diagram showing relations of the joint
Q4. Explain mediastinum and what are the anatomical signification in mediastinum.
Q5. Explain all types of bones with their examples.

Short Answer Questions (Attempt any six out of eight) **6 x 5= 30**

Q1**.** Write the origin, insertion, and action of the following muscles
a) Pectoralis Major
b) Deltoid
Q2. Arches of foot
Q3. Foot drop
Q4. Rotator Cuff

Q5. Femoral triangle
Q6 Movement of ribs during respiration.
Q7. Reflex arc
Q8. Brachial Plexus

MODEL PAPER

BPT-I Year **HP-I**
(BPT23S102T)

Bachelor of Physiotherapy (BPT) Semester-I
End of Semester Evaluation (Month/Year)

Paper-II

Human Physiology - I

Time: Three Hour
Maximum Marks :70

Attempt **all** Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) **4x10=40**

Q1. Define excitation contraction coupling. Give sequence of events during its occurrence. Explain molecular basis of muscle contraction.
Q2 Describe cardiac cycle and add a short note on cardiac output ?

Q3. Describe mechanism of respiration and briefly explain the lungs volume?

Q4. Describe the composition of blood and general functions of blood?

Q5. Explain Tracts – Ascending and descending and extra-pyramidal tracts?

Short Answer Questions (Attempt any six out of eight) **6x5 = 30**

Q1. Heart sounds

Q2. Neuromuscular junction

Q3. Neuron

Q4. Mechanism of Respiration

Q5. Structure and properties of Heart Muscles and nerve supply of Heart.

Q6. Motor units and its properties

Q7. Thalamus & Hypothalamus – connection and functions

Q8. Blood groups and their significance

MODEL PAPER

BPT-I Year **BoExT-I**
(BPT23S103T)

Bachelor of Physiotherapy (BPT) Semester-I
End of Semester Evaluation (Month/Year)

Paper-III
Basics of Exercise Therapy I & Orientation to Physiotherapy

Time: Three Hour
Maximum Marks :70

Attempt **all** Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) **4x10=40**

Q1. Define fundamental positions and explain with its muscle work?.

Q2 Classification of movements

Q3 Define lever, mechanical advantages and explain lever anatomical examples?

Q4. Explain the code of ethics in physiotherapy?

Q5 Describe the importance of Physiotherapy in medical Field.

Short Answer Questions (Attempt any six out of eight)

Q1. AXIS AND PLANE

Q2. Re-education, early re-education of a paralyzed muscle.

Q3. Pendulum & spring

Q4. Assisted Exercises: Technique and uses

Q5. Physiotherapy Practice Guidelines

Q6. Principles of muscle strengthening

Q7. Derived positions of the sitting fundamental starting position

Q8. APTA

MODEL PAPER

BPT-I Year **BoET-I**
(BPT23S104T)

Bachelor of Physiotherapy (BPT) Semester-I
End of Semester Evaluation (Month/Year)

Paper-IV
Basics of Electrotherapy I

Time: Three Hour
Maximum Marks :70

Attempt **all** Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) **4x10=40**

Q1. What is electric shock? What is its potential cause in PT department? Give its prevention and management

Q2 Describe iontophoresis, its indications and contraindications.

Q3. Rectifying devices in detail

Q4. Physical principles of light and its properties

Q5. Production of DC- physiological and therapeutic effects of DC

Short Answer Questions (Attempt any six out of eight) **5x6 = 30**

Q1.Transformers

Q2.Ohm's Law

Q3.Electromagnetic induction

Q4.Sinusoidal currents

Q5.Conductors

Q6.Mains supply of current

Q7. Joule's law

Q8. Electromagnetic spectrum

MODEL PAPER

BPT-I Year **ECS**
(BPT23S105T)

Bachelor of Physiotherapy (BPT) Semester-II
End of Semester Evaluation (Month/Year)

Paper- V
English and Communication Skills

Time: Three Hour
Maximum Marks :70

Attempt **all** Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) **4x10=40**
Q1**.** Explain in detail the Process of Communication.

Q2. When does Communication fail? Or Barriers of communication

Q3. What is need for listening?

Q4. Explain briefly Listening Skills.

Q5. Explain the skills of communicating with patients and their attenders in Hospitals.

Short Answer Questions (Attempt any six out of eight) **6x5 = 30**
Q1. Summary writing

Q2. Direct and Indirect speech

Q3. Portmanteau words

Q4. Audience psychology

Q5. What is efficient and fast reading

Q6. How can you improve your vocabulary.

Q7. Basics of non-verbal communication

Q8. Importance and Art of Intelligent Listening.

MODEL PAPER

BPT-I Year **BYP**
(BPT23S106T)

Bachelor of Physiotherapy (BPT) Semester-I
End of Semester Evaluation (Month/Year)

Paper-VI
Basic Yoga Practices

Time: Three Hour
Maximum Marks :70

Attempt **all** Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) **4x10=40**

Q1. Explain the importance of practicing Yoga in daily life?

Q2. Write an essay on the objectives, preparations and various methods of meditation.

Q3. Briefly explain Pranayama.

Q4. Explain in detail about the Breathing Exercises.

Q5. Describe Karma Yoga

Short Answer Questions (Attempt any six out of eight) **6x5 = 30**

Q1.Rabbit Breathing

Q2.Pavanamuktasana kriya

Q3.Suryanamaskar

Q4.Kapalbhati , Anuloma Viloma

Q5.Neti Kriya

Q6.Preparation done before performing kriya

Q7.Kapalbhati

Q8.Quick Relaxation Technique

MODEL PAPER

BPT-I Year **HP-II**
(BPT23S201T)

Bachelor of Physiotherapy (BPT) Semester-II
End of Semester Evaluation (Month/Year)

Paper- I
Human Anatomy II

Time: Three Hour
Maximum Marks :70

Attempt **all** Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) **4x10=40**

Q1. Describe the circle of willis with labelled diagram
Q2 Cerebellum: gross features and functions
Q3. Describe the vertebral column under the following headings:
a) Identification of vertebra and intervertebral joints
b) IVD
c) Applied Anatomy
Q4. Name cranial nerves in order and their functions. Differentiate between UMN &LMN along with their applied anatomy?
Q5. Explain the cerebrum under the following headings:
Gross features
Functional Areas and Blood supply
Applied anatomy

Short Answer Questions (Attempt any six out of eight) **5x6 = 30**

Q1.Differences between sympathetic and parasympathetic nervous system
Q2.Write the origin, insertion, and action of the following muscles
a) sternocleidomastoid
b) trapezius
Q3.Describe the stomach
Q4.Diaphragm
Q5.Muscle of mastication
Q6.Facial nerve and its branches
Q7. Pyramidal and extra pyramidal tracts
Q8.Sacral plexus

MODEL PAPER

BPT-I Year **HP-II**
(BPT23S202T)

Bachelor of Physiotherapy (BPT) Semester-II
End of Semester Evaluation (Month/Year)

Paper- II
Human Physiology II

Time: Three Hour
Maximum Marks :70

Attempt **all** Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) **4x10=40**

Q1. Describe the actions of glucocorticoids and the mechanism that regulates its secretion

Q2 Describe Nutrition and Diet in detail

Q3. Menstrual cycle

Q4 Structure and function of pituitary gland (anterior & posterior)

Q5. Blood sugar regulation.

Short Answer Questions (Attempt any six out of eight) **5x6 = 30**

Q1. GFR (Glomerular filtration rate)

Q2. Pancreatic Juice

Q3. Spermatogenesis

Q4. Pituitary dwarfism and cretinism

Q5. Physiology of micturition

Q6. Skin-Structure and functions.

Q7.Gross and minute structures of kidney

Q8. Renal function and renal tests.

MODEL PAPER

BPT-I Year **BoEx.T II**
(BPT23S203T)

Bachelor of Physiotherapy (BPT) Semester-II
End of Semester Evaluation (Month/Year)

Paper- III
Basics of Exercise Therapy II

Time: Three Hour
Maximum Marks :70

Attempt **all** Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) **4x10=40**

Q1. Define massage, classification of massage, explain its physiological and therapeutic effects?
Q2 Define relaxation, technique, uses of relaxation
Q3. Explain goniometry, types and determinants
Q4. Describe in detail about the Factors contributing to fatigue and relaxation.
Q5. Explain about the principles of Goniometry and mention the goniometry of shoulder joint.

Short Answer Questions (Attempt any six out of eight) **6x5 = 30**

Q1. Classification of joint movement
Q2. Principles of suspension therapy
Q3. Write about resisted exercise and types of resistance
Q4. DeLorme's Method
Q5. Equipments used in Gymnasium.
Q6. Limb length and girth measurement.
Q7. Describe muscle fatigue, muscle spasm and tension
Q8. APTA

MODEL PAPER

BPT-I Year **BoET II**
(BPT23S204T)

Bachelor of Physiotherapy (BPT) Semester-II
End of Semester Evaluation (Month/Year)

Paper- IV
Basics of Electrotherapy II

Time: Three Hour
Maximum Marks :70

Attempt **all** Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) **4x10=40**

Q1. Describe construction and working of kromayer lamp and its Physiological effects?

Q2 Explain techniques of infra-red treatment, its therapeutic uses and dangers

Q3. Define the faradic and galvanic current and its method of application in case of degeneration

Q4. Write down the principles, indications, and contraindications of paraffin wax bath?

Q5. Types and sources of UVR generation. Dosage calculation of UVR.

Short Answer Questions (Attempt any six out of eight) **6x5 = 30**

Q1. Faradic foot bath

Q2**.** Whirlpool bath

Q3. Hydrocollator pack

Q4. SD curve

Q5. Rheobase and chronaxie

Q6. Contrast bath

Q7. Moist heat

Q8. Types of lesion and development of reaction of degeneration

MODEL PAPER

BPT-I Year **BC**
(BPT23S205T)

Bachelor of Physiotherapy (BPT) Semester-I
End of Semester Evaluation (Month/Year)

Paper- V

Biochemistry

Time: Three Hour
Maximum Marks :70

Attempt **all** Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) **4x10=40**

Q1.Explain in detail Structure and functions of cell?

Q2.Define Carbohydrates and explain in detail its functions, sources & its classification.

Q3.Define Vitamins and explain in detail functions, sources & classification Fat Soluble Vitamins

Q4.Describe in detail about the Mechanism of Hormone actions.

Q5. What are the functions of protein? Write the nutritional classification of amino acid. What is denaturation?

Short Answer Questions (Attempt any six out of eight) **6x5 = 30**

Q1. Mucopolysacharides

Q2. Energetic reaction

Q3. Vitamin deficiency.

Q4. Acid-base equilibrium

Q5. Metabolism of bone

Q6. Diet for chronically ill

Q7. Dehydration

Q8. Vitamins A,D,E & K

MODEL PAPER

BPT-I Year **ES**

(BPT23S206T)

Bachelor of Physiotherapy (BPT) Semester-II
End of Semester Evaluation (Month/Year)

Paper- VI
Environmental Science

Time: Three Hour
Maximum Marks :70

Attempt **all** Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) **4x10=40**

Q1. Describe in detail about components of Environment?

Q2.Explain about the Scope and importance of environmental science.

Q3. Explain in detail Energy flow in an ecosystem.

Q4.Explain any two case studies of following ecosystem

a) Forest ecosystem
b) Grassland ecosystem
c) Desert ecosystem
d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

Q5. Define Deforestation and its causes and impacts due to mining.

Short Answer Questions (Attempt any six out of eight) **6x5 = 30**

Q1. Renewable and non-renewable energy sources

Q2. Biodiversity

Q3.Soil erosion and Desertification.

Q4. Use and over-exploitation of surface and ground water

Q5. Function of ecosystem.

Q6. Desert ecosystem

Q7. Land Resources

Q8 Food web

MODEL PAPER

BPT-II Year **Ex.Th I**
(BPT23S301T)

Bachelor of Physiotherapy (BPT) Semester-IIII
End of Semester Evaluation (Month/Year)

Paper-I
Exercise Therapy I

Time: Three Hour
Maximum Marks :70

Attempt **all** Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) **4x10=40**

Q1.Write in detail about different types of bandaging technique for knee & ankle?

Q2 Write down the principles of Aerobic exercise and its physiological effects?

Q3. What are the criteria for exercise prescription for different age group

Q4.Principles of Traction, Physiological and Therapeutic effects, Indications, Contraindications, techniques of application,

Q5. Stretching Techniques and its determinants

Short Answer Questions (Attempt any Six out of Eight) **6x5=30**

Q1.Taping of ankle joint.

Q2.Types of stretching.

Q3.Physiological response of Aerobic Exercises

Q4.Determinants of exercise Program.

Q5.Cervical traction

Q6.Grades of mobilization

Q7.Indications of Therapeutic exercise.

Q8.Stretching of trapezius

MODEL PAPER

BPT-II Year **El.Th I**
(BPT23S302T)

Bachelor of Physiotherapy (BPT) Semester-III
End of Semester Evaluation (Month/Year)

Paper-II
Electrotherapy II

Time: Three Hour
Maximum Marks :70

Attempt **all** Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) **4x10=40**

Q1.Explain the various types of low frequency currents and briefly explain the types of TENS, Write in detail, its indication and contraindications

Q2 Define IFT, describe the production and physiological effects of IFT

Q3. Write down the principle, production, indication and contra indication of SWD

Q4.Theories of pain relief.

Short Answer Questions (Attempt any Six out of Eight) **6x5=30**

Q1.Application method of SWD
Q2.Production of MWD
Q3.. Application of MWD
Q4.Techniques of application of Pulsed SWD
Q5. Explain Capacitor feild method of SWD
Q6 .Placement of TENS
Q7.Indications and contraindications of IFT
Q8.Indications and contraindications and dangers of MWD

MODEL PAPER

BPT-II Year **B & K I**
(BPT23S303T)

Bachelor of Physiotherapy (BPT) Semester-III
End of Semester Evaluation (Month/Year)

Paper-III

Biomechanics and Kinesiology I

Time: Three Hour
Maximum Marks :70

Attempt **all** Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) **4x10=40**

Q1. Describe kinematics & kinetics of scapulohumeral joint

Q2 Write down the classification of muscles. Describe in details about the types of muscle contraction & muscle work

Q3. Classification of joints . Kinetics and kinematics of shoulder joint.

Q4. Describe kinematics & kinetics of wrist joint.

Q5. Define posture. Discuss in details about the postural deviations

Short Answer Questions (Attempt any Six out of Eight) **6x5=30**

Q1. Pronation and supination

Q2. Biomechanic of elbow joint

Q3.Pathological gait

Q4.scapulohumeral Rhythm

Q5 Postural deviation

Q6. Carrying angle angle with diagram

Q7. Newtons law of motions

Q8. Arthrokinematics of wrist joint

MODEL PAPER

BPT-II Year **Path.**
(BPT23S304T)

Bachelor of Physiotherapy (BPT) Semester-III
End of Semester Evaluation (Month/Year)

Paper-IV
Pathology

Time: Three Hour
Maximum Marks :70

Attempt **all** Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) **4x10=40**

Q1.Define and classify the inflammation and describe the stages of inflammation

Q2 Describe coronary heart disease.

Q3.Define poliomyelitis. Describe different stages and path physiology of poliomyelitis

Q4. Explain anemia

Q5. Define myopathies. Explian in detail.

Short Answer Questions (Attempt any Six out of Eight) **6x5=30**

Q1.Diabetes mellitus

Q2. necrosis and gangrene

Q3. Embolism

Q4. Volkmann's ischemic contracture

Q5. Healing and repair

Q6. Atrophy

Q7. Gout

Q8. Transudate and exudates

MODEL PAPER

BPT-II Year **MFR**
(BPT23S305T)

Bachelor of Physiotherapy (BPT) Semester-III
End of Semester Evaluation (Month/Year)

Paper-V
Myofascial Release Technique

Time: Three Hour
Maximum Marks :70

Attempt **all** Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) **4x10=40**

Q1.Define MFR and its physiological effects.

Q2.Explain the difference between Therapeutic massage and MFR.

Q3.Define Fascia and causes of Myofascial Restriction.

Q4.Explain in detail general techniques of applications of MFR..

Q5.Describe the aims & benefits of MFR..

Short Answer Questions (Attempt any Six out of Eight) **6x5=30**

Q1. Indications & Contraindications of MFR.

Q2. Precautions of MFR.

Q3. Myofascial Release Technique

Q4. Skin Rolling

Q5. Cross Hand Release Technique – a) Longitudinal Release Technique
b) Transverse Release Technique

Q6. Functions of Fascia.

Q7. J- Strokes

Q8.Deep Tissue Stroking .

MODEL PAPER

BPT-II Year **Micro.**
(BPT23S306T)

Bachelor of Physiotherapy (BPT) Semester-III
End of Semester Evaluation (Month/Year)

Paper-VI
Microbiology

Time: Three Hour
Maximum Marks :70

Attempt **all** Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) **4x10=40**

Q1. Define and classify the immunity, briefly explain the innate and acquired immunity?

Q2. Describe sterilization with examples?

Q3. Describe source of infection, entry and its spread?

Q4. Explain poliomyelitis and rabies.

Q5. Explain urinary tract infections

Short Questions (Attempt any six of eight) **6x5=30**

Q1. Laboratory diagnosis of urinary tract infect

Q2. Robert Koch

Q3. Laboratory diagnosis of HIV

Q4. Hospital acquired infection

Q5. Difference between the prokaryotic and eukaryotes

Q6.Diffrence between allergy and hypersensitivity.

Q7.Wound infections.

Q8.Hepatitis

MODEL PAPER

BPT-II Year **Ex.Th II**
(BPT23S401T)

Bachelor of Physiotherapy (BPT) Semester-IV
End of Semester Evaluation (Month/Year)

Paper-I

EXERCISE THERAPY II

Time: Three Hour

Maximum Marks :70

Attempt **all** Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) **4x10=40**

Q1. What is postural drainage ? it's indication contraindication ? Write postural drainage position for lingular lobe?

Q2. What is hydrotherapy? What are the principles, indications, contra-indications, effects & uses of hydrotherapy

Q3. Define Gait? Write down the phases of gait and explain stance phase

Q4. Define Posture, types , factors responsible for god and bad posture,

Q5. Breathing exercises and mechanism of respiration,

Short Answer Questions (Attempt any Six out of Eight) **6x5=30**

Q1**.** PNF techniques

Q2. 3 point and 4 point gait.

Q3. Yoga and its techniques

Q4. Posture

Q5. Techniques to improve balance

Q6. Frenkel exercises

Q7.Segmengtal breathing

Q8.PNF of shoulder joint

MODEL PAPER

BPT-II Year **El.Th II**
(BPT23S402T)

Bachelor of Physiotherapy (BPT) Semester-IV
End of Semester Evaluation (Month/Year)

Paper-II

Electrotherapy II

Time: Three Hour

Maximum Marks :70

Attempt **all** Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) **4x10=40**

Q1. Describe the production and application methods of US therapy .
Q2. Describe bio-feedback including the principles, indication & contra indication
Q3. Describe Electro diagnosis
Q4. Laser ;
a) Introduction and characteristics.
b) Types of laser & its Effect on tissues.
c) Physiological & Therapeutic effects.
d) Indication, contraindication and dangers.
Q5. Cryotherapy
a) principle
b) Physiological effects
c) Indication and contraindication
d) Therapeutic effects and technique of application

Short Answer Questions (Attempt any Six out of Eight) **6x5=30**

Q1.Properties of LASER
Q2.Thermal effects of therapeutic ultrasound
Q3. Techniques of application of cryotherapy
Q4.Coupling media
Q5.Types of laser & its Effect on tissues.
Q6. Indication and contraindication of Bio- Feedback
Q7. EMG and ENG
Q8.Combination Therapy

MODEL PAPER

BPT-II Year **B & K II**
(BPT23S403T)

Bachelor of Physiotherapy (BPT) Semester-IV
End of Semester Evaluation (Month/Year)

Paper-III
Biomechanics & Kinesiology II

Time: Three Hour
Maximum Marks :70

Attempt **all** Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) **4x10=40**

Q1. Explain gait cycle. Discuss in details about the gait deviations in neurological disorders
Q.2 Describe kinematics & kinetics of hip joint
Q.3. Biomecahnics of vertebral column .
Q.4.Define lever. Explain all its types with examples (Mechanical & human body) in detail
Q.5 Explain in details kinematics and kinetics of patella femoral joint .

Short Answer Questions (Attempt any Six out of Eight) **6x5=30**

Q1.Lumbo pelvic Rhythm .

Q2.Biomechanic of ankle joint .

Q3.Pathological gait .

Q4.Classification of joints .

Q5.Knee joint kinematics .

Q6.Gait deviations in various orthopedic/neurological conditions.

Q7.Hip & pelvis biomechanic.

Q8.Gait cycle with diagram.

MODEL PAPER

BPT-II Year **Pharm.**
(BPT23S404T)

Bachelor of Physiotherapy (BPT) Semester-IV
End of Semester Evaluation (Month/Year)

Paper-IV
Pharmacology

Time: Three Hour
Maximum Marks :70

Attempt **all** Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) **4x10=40**

Q1. Classify the NSAIDs, discus the therapeutic uses and adverse effects of NSAIDs.

Q2 Describe the routes of drug administration

Q3. Enumerate various factors influencing dose and response of drugs.

Q4. Classify anti- epileptic drugs. W rite down the treatment of grand mal epilepsy

Q5. Classify the anesthetics with examples

Short Answer Questions (Attempt any Six out of Eight) **6x5=30**

Q1. Antitubercular drugs

Q2. ACE- inhibitors

Q3.Anticholinesterase

Q4 .Anaphylactic shock

Q5 .Organophosphorus poisoning

Q6 .Bronchodilators

Q7 .Corticosteroids

Q8. Treatment of bronchial asthma

MODEL PAPER

BPT-II Year **S&B**
(BPT23S405T)

Bachelor of Physiotherapy (BPT) Semester-IV
End of Semester Evaluation (Month/Year)

Paper-V

Splinting & Bracing

Time: Three Hour
Maximum Marks :70

Attempt **all** Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) **4x10=40**

Q.1 Biomechanical principles for orthosis.

Q2.Braces for the Management of scoliosis.

Q3.Proshetic Knees and Knee Disarticulation Management.

Q4.Classification of orthotic aids and appliances.

Q5.Write about prosthetic management of partial hand amputee

Short Answer Questions (Attempt any Six out of Eight) **6x5=30**

Q1. Orthosis prescription criteria based on clinical scenario
Q2.Task Specific Prostheses, Prosthetic management of Wrist Disarticulation,
Q3 Myoelectric Below Elbow prosthesis
Q4.Upperlimb prosthesis
Q5.Articulated AFO, Various Shoe modifications
Q6.Orthoses for LBP
Q7.Orthotics used for Gait training
Q8. Prosthetic management of Forefoot amputees

MODEL PAPER

BPT-II Year **CM**
(BPT23S406T)

Bachelor of Physiotherapy (BPT) Semester-IV
End of Semester Evaluation (Month/Year)

Paper-VI

Community Medicine

Time: Three Hour

Maximum Marks :70

Attempt **all** Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) **4x10=40**

Q1. What are vector borne diseases. Write about their classification in brief

Q2 What are the health problems of pregnant and lactating women. What are programmes in India to take care of these

Q3. What are various measures for prevention of occupational diseases. Describe in short the most important factory laws in India

Q4. Mention 4 hazards of obesity. Describe the nutritional problems in public health

Q5. Write briefly about role of Physiotherapy Therapy in mental retardation

Short Answer Questions (Attempt any Six out of Eight) **6x5=30**

Q1. Epidemological triad

Q2.Preventive measures of infant mortality

Q3Water harvesting

Q4.Biomedical waste management

Q5..Benefits of employee state insurance scheme

Q6.DOTS Plus

Q7.Rehabilitation

Q8.National family planning programmes

MODEL PAPER

BPT-III Year Clin. Ortho.-I

BPT 23S501T

Bachelor of Physiotherapy (BPT) Semester-V
End of Semester Evaluation (Month/Year)

Paper-I

Clinical Orthopaedics I

Time: Three Hour
Maximum Marks :70

Attempt **all** Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) 4x10=40

Q1. Describe classification of fracture neck of femur and how will you manage a case of fracture neck of femur in 70 year old lady.

Q2 Describe etiology clinical feature investigation and management of OA knee.

Q3 Discuss the causes and management of pott's paraplegia.

Q4. Classification of Fractures. Factors affecting fracture healing.

Q5. Discuss the cause and management of cervical & lumbar spondylosis.

Short Answer Questions (Attempt any six out of eight) 6x5=30

Q1. Planter fasciitis.

Q2**.** Frozen shoulder.

Q3 Tennis elbow

Q4. Colles fracture

Q5. Perthes disease.

Q6. Torticollis.

Q7 Hand Deformities in rheumatoid arthritis.

Q8.Levels of amputation

MODEL PAPER

BPT-III Year **POC I**

BPT23S502T

Bachelor of Physiotherapy (BPT) Semester-V
End of Semester Evaluation (Month/Year)

Paper-II
Physiotherapy in Orthopaedic Conditions I

Time: Three Hour
Maximum Marks :70

Attempt **all** Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) 4x10=40

Q1. Discuss the supracondylar fracture of humerus, its complications and PT management

Q2. Write down about clinical feature, diagnosis and PT management of pott's spine

Q3. Physiotherapy management of Fractures, and dislocations- Upper extremity, lower Extremity and spine.

Q4. Physiotherapy management of Fracture, and dislocation complications.

Q5. Physiotherapy in relation to amputation

Short Answer Questions (Attempt any Six out of Eight) 6x5=30

Q1. PT management of anterior dislocation of shoulder joint
Q2. Scoliosis
Q3 PT management of above knee amputation
Q4. CTEV
Q5. De quervain's disease
Q6. Torticollis
Q7. Factors affecting fracture healing
Q8. Tennis elbow

MODEL PAPER

BPT-III Year **GM**

BPT23S503T

Bachelor of Physiotherapy (BPT) Semester-V
End of Semester Evaluation (Month/Year)

Paper-III
General Medicine

Time: Three Hour
Maximum Marks :70

Attempt **all** Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) 4x10=40

Q1. Define bronchial asthma, its etiology, clinical feature, complications & its management
Q2. Describe clinical presentation of MI, its management and complication
Q3. Define rheumatoid arthritis (RA), clinical features, deformities and its management
Q4. Define anemia, outline its causes(etiology), classification & management.
Q5. Describe Nutritional Diseases and its physiology, clinical presentation

Short Answer Questions (Attempt any Six out of Eight) 6x5=30

Q6. Pneumothorax
Q7. Transferring from bed to wheelchair
Q8. Diabetes mellitus
Q9. Leprosy and its management
Q10.DVT
Q11. Anemia
Q12. Instrumentation used in First Aid
Q13. Meningitis

MODEL PAPER

BPT-III Year **DP&R I**

BPT23S504T

Bachelor of Physiotherapy (BPT) Semester-V
End of Semester Evaluation (Month/Year)

Paper-IV
Disability Prevention and Rehabilitation I

Time: Three Hour
Maximum Marks :70

Attempt **all** Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) 4x10=40

Q1. Explain CBR. Write down about rehabilitation team and their role in CBR

Q2. What are the various schemes of government of India for the assistance of person with disabilities. Describe any one of them

Q3. Write down about architectural barriers in public places. write modification of architectural barriers.

Q4. Behavioural problems in the Disabled its principle of management.

Q5. Rehabilitation Team & its members, their role.

Short Answer Questions (Attempt any Six out of Eight) 6x5=30

Q1. Difference between impairment, disability and handicap
Q2. Role of primary health centres
Q3. Principles of disability evaluation
Q4. Visual disability
Q5. Functional assessment scales

Q6. Difference between CBR and IBR
Q7. Principles of Communication & its problems and management.

MODEL PAPER

BPT-III Year **HR**

BPT23S505T

Bachelor of Physiotherapy (BPT) Semester-V
End of Semester Evaluation (Month/Year)

Paper-V
Hand Rehabilitation

Time: Three Hour
Maximum Marks :70

Attempt **all** Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) 4x10=40

Q1.Discuss about Kinetics and Kinematics of Wrist and Hand Complex?

Q2.Discuss about the fractures around the Wrist and Hand Complex?

Q3.Describe Special tests for Wrist and Hand Complex.

Q4.Explain Functional positions of wrist and hand?

Q5.Describe Bony Landmarks of Wrist and Hand?

Short Answer Questions (Attempt any Six out of Eight) 6x5=30

Q1.Carpal tunnel syndrome.

Q2.Crush Injury.

Q3.Dupuytren's Contracture?

Q4.Function and Architecture of Hand?

Q5.Complex Regional Pain Syndrome

Q6.Rheumatoid Hand

Q7.Boutonniere's Deformity

Q8.Vocational training of Hand

MODEL PAPER

BPT-III Year **Socio.**

BPT23S506T

Bachelor of Physiotherapy (BPT) Semester-V
End of Semester Evaluation (Month/Year)

Paper-VI
Sociology

Time: Three Hour
Maximum Marks :70

Attempt **all** Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) 4x10=40

Q1. Define sociology and discuss how sociology is helpful & related to physiotherapy

Q3. Explain the socialization and its influences of social factors of human personality.

Q4. Social groups and their role in the hospital and rehabilitation settings.

Q5. Describe Family and the influence of family on the individual's rehabilitation.

Short Answer Questions (Attempt any Three out of five) 6x5=30

Q1. Population explosion

Q2. Problems of village

Q3. Stress

Q4. Alcoholism

Q5. Unemployment and family disorganization

Q6 Scope of sociology

Q7. Juvenile delinquency

Q8. Marriage

Q2. Explain health institutions and discuss their role in the improvement of health of the people.

MODEL PAPER

BPT-III Year **CO II**

BPT23S601T

Bachelor of Physiotherapy (BPT) Semester-VI
End of Semester Evaluation (Month/Year)

Paper-I
Clinical Orthopaedics II

Time: Three Hour
Maximum Marks :70

Attempt **all** Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) 4x10=40

Q1. Classify the peripheral nerve injury & describe radial nerve injury

Q2. Explain clinical feature, diagnosis and management of PIVD.

Q3. Bone and joint tumors- classification, clinical features and management of benign and malignant bone and joint tumors

Q4. Sports injuries and its management.

Q5. Principle of Tendon transfer and its procedure.

Short Answer Questions (Attempt any Six out of Eight) 6x5=30

Q6. Carpal tunnel syndrome
Q7. Sciatica
Q8. Foot drop
Q9. Poliomyelitis
Q10.Trauma and its care
Q11. Erb's Palsy
Q12. Low back pain
Q13. Ankylosing Spondylitis

MODEL PAPER

BPT-III Year **POCII**

BPT23S602T

Bachelor of Physiotherapy (BPT) Semester-VI
End of Semester Evaluation (Month/Year)

Paper-II
Physiotherapy in Orthopedic Conditions II

Time : Three Hour
Maximum Marks :70

Attempt **all** Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) 4x10=40

Q1. Clinical feature, diagnosis and PT management of ankylosing spondylitis
Q2. Principles of tendon transfer and PT management of tendon transfer of median nerve injury
Q3. Write down about clinical feature, diagnosis and PT management of pott's spine
Q4. Write down the physiotherapy in Bone and joint tumors- classification, clinical features and management of benign and malignant bone and joint tumors
Q5. Clinical features, diagnosis and PT management of foot drop.

Short Answer Questions (Attempt any Six out of Eight) 6x5=30

Q1. Carpal tunnel syndrome
Q2 Leprosy
Q3. Osteomyelitis
Q4. pyogenic infection
Q5. Principles of tendon transfer
Q6. Brachial plexus

Q7. canal stenosis
Q8. Cervical spondylosis

MODEL PAPER

BPT-III Year **Paeds.**

BPT23S603T

Bachelor of Physiotherapy (BPT) Semester-VI
End of Semester Evaluation (Month/Year)

Paper-III
Paediatrics

Time : Three Hour
Maximum Marks :70

Attempt **all** Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) 4x10=40

Q1. Describe cerebral palsy including the classification, etiology and management CP

Q2. Describe in details National immunization program of India for children.

Q3. Describe growth and development of child from birth to 12 years

Q4. Describe in detail still's disease

Q5. Normal diet of new born and child

Short Answer Questions (Attempt any Six out of Eight) 6x5=30

Q6. Muscular dystrophy
Q7. Spina bifida

Q8. Lung abscess

Q9. High risk pregnancy

Q10. Convulsions

Q11. Bronchiectasis

Q12. Cystic fibrosis

Q13. Malnutrition

MODEL PAPER

BPT-III Year **DP&RII**

BPT23S604T

Bachelor of Physiotherapy (BPT) Semester-VI
End of Semester Evaluation (Month/Year)

Paper-IV

Disability Prevention and Rehabilitation II

Time : Three Hour
Maximum Marks :70

Attempt **all** Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) 4x10=40

Q1. Explain geriatric rehabilitation. write down about problems facing in communication with geriatric patients and their management.

Q2. Describe vocational evaluation. Write the role of vocational counsellor in vocational training.

Q3. Define prosthesis. Write down about wheelchair measurements.

Q4. Visual disability: Definition and classification, mobility techniques, communication skills, prevention of blindness

Q5. Ethics

Short Answer Questions (Attempt any Six out of Eight) 6x5=30

Q6. pre-vocational evaluation and training.
Q7. Discuss about HKAFO
Q8. Occupational rehabilitation
Q9. Ergonomics
Q10. Functional Assessment scales
Q11. sports wheel chair
Q12. Ambulatory Aids & Assistive Devices
Q13 Pedi

MODEL PAPER

BPT-III Year **VR**

BPT23S605T

Bachelor of Physiotherapy (BPT) Semester-VI
End of Semester Evaluation (Month/Year)

Paper-V

Vestibular Rehabilitation

Time : Three Hour
Maximum Marks :70

Attempt **all** Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) 4x10=40

Q1. Write in detail about vestibular function test.
Q2. Explain BPPV, its causes, assessment, and treatment.
Q3. Write in detail about the vestibular rehabilitation plan for BPPV patients.
Q4. Explain in detail Balance assessment.
Q5. What is Oculomotor examination.

Short Notes (Attempt any Six out of Eight) 6x5=30

Q1. What is GAIT and write in detail its assessment.
Q2. Describe in detail about vestibular system in body.
Q3. Write down berg balance scale.
Q4. Write down in detail role of vestibular system in postural control.
Q5. Explain clinical decision making for patients.

Q6. Write in detail plan of care for Vertigo patients.
Q7. Caloric test.
Q8. Oculomotor Examination.

MODEL PAPER

BPT-III Year **Psycho.&Psych.**

BPT23S606T

Bachelor of Physiotherapy (BPT) Semester-VI
End of Semester Evaluation (Month/Year)

Paper-VI
Pschology & Psychiatry

Time : Three Hour
Maximum Marks :70

Attempt **all** Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) 4x10=40

Q1. Define learning. Briefly explain classical learning. Explain the insight theory of learning.
Q2. Define memory. how can memory be measured. briefly explain the causes of forgetting.
Q3. Explain major theories of emotion
Q4. Describe Hereditary and Environment under the following headings:
Relative importance of heredity and environment
Nature vs. nurture controversy
Q5. Definition/criteria of Normality and Abnormality and factor contributing to normal mental health

Short Answer Questions (Attempt any Six out of Eight) 6x5=30

Q1. Psychosomatic disorders
Q2. Illusion vs hallucination
Q3. Guildford theory of intelligence
Q4. Perception
Q5. Methods of studying of child development
Q6. Substances abuse disorders

Q7. Child psychiatry
Q8. Difference between Illusion and Hallucination

MODEL PAPER

BPT-IV Year **Neuro**.

BPT23S607T

Bachelor of Physiotherapy (BPT) Semester-VII
End of Semester Evaluation (Month/Year)

Paper-I
Neurology & Neurosurgery

Time : Three Hour
Maximum Marks :70

Attempt **all** Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) 4x10=40

Q1Discuss clinical features and management of low back pain

Q2 Name the cranial nerves. Describe the management of Bell's palsy

Q3.Define poliomyelitis. Describe different stages and path physiology of poliomyelitis

Q4.Explain Spina bifida, its classification & treatment.

Q5.Describe clinical feature and management of meningitis .

Short Answer Questions (Attempt any Six out of Eight) 6x5=30

Q1. UTI

Q2. Glasgow coma scale

Q3. Peripheral nerve lesions management

Q4. Tubercular Meningitis

Q5. Diabetic Neuropathy

Q6. CVA

Q7. Syringomyelia

Q8. Neurogenic bladder

MODEL PAPER

BPT-IV Year **PTN&NCI.**

BPT23S702T

Bachelor of Physiotherapy (BPT) Semester-VII
End of Semester Evaluation (Month/Year)

Paper-II

Physiotherapy in Neurological & Neurosurgical Conditions

Time: Three Hours

Maximum Marks :70

Attempt **all** Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) 4x10=40

Q1Discuss clinical features and management of low back pain and PT management
Q2 Name the cranial nerves. Describe the management of Bell's palsy and its PT management
Q3.Define poliomyelitis. Describe different stages and path physiology of poliomyelitis along with its PT management
Q4. Write the PT management and complication of Gullain-Barre syndrome
Q5. Describe clinical feature and management of meningitis along with PT management

Short Answer Questions (Attempt any Six out of Eight) 6x5=30

Q1. Subdural hematoma
Q2. Glasgow coma scale
Q3. DMD and PT management
Q4. Tubercular Meningitis and PT management
Q5. Diabetic Neuropathy and PT management

Q6. Function of CSF
Q7. Spina bifida
Q8. Dementia

MODEL PAPER

BPT-IV Year **PMC**

BPT23S703T

Bachelor of Physiotherapy (BPT) Semester-VII
End of Semester Evaluation (Month/Year)

Paper-III

Physiotherapy in Medical Conditions

Time: Three Hours
Maximum Marks :70

Attempt **all** Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) 4x10=40

Q1.Describe in detail about bronchiectasis its physiotherapy management.
Q2. Define heart failure. Write in brief about its clinical features, types and physiotherapy management
Q3. Write down PID and its PT management stress incontinence and its PT management
Q4. Define muscular dystrophy & its types PT management of muscular dystrophy

Q5. Explain the sign and symptoms which occur during an acute attack of bronchial asthma. Give an an account of its PT management

Short Answer Questions (Attempt any Six out of Eight)

Q1. Stress incontinence

Q2.types of ventilators

Q3.Leprosy

Q4.Pressure sores

Q5.Rickets

Q6.Acne and Psoriasis

Q7.PT management of COPD

Q8.PT in obesity

MODEL PAPER

BPT-IV Year **Ex.P&SPI**

BPT23S704T

Bachelor of Physiotherapy (BPT) Semester-VII
End of Semester Evaluation (Month/Year)

Paper-IV

EXERCISE PHYSIOLOGY AND SPORTS PHYSIOTHERAPY I

Time: Three Hours
Maximum Marks :70

Attempt **all** Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) 4x10=40

Q1. Describe in terms of pre game diet and post game diet
Q2. Describe the physiological effects of exercise on endocrine system and nervous system

Q3. What is PIVD ? Describe the physiotherapeutic management for sport personnel

Q4. Describe the principle of training and rehabilitation in sports injury

Q5. Describe the physiological effects of exercise on cardiorespiratory and muscular system

Short Answer Questions (Attempt any Six out of Eight) 6x5=30

Q1. Female Athlete Triad
Q2. Swimmer's knee

Q3. Doping

Q4. Musculoskeletal problem in younger athlete

Q5. Risk of exercise in elderly

Q6. Jumpers knee

Q7. Whiplash injury

Q8.Game Keepers Thumb

MODEL PAPER

BPT-IV Year **BLS**

BPT23S705T

Bachelor of Physiotherapy (BPT) Semester-V
End of Semester Evaluation (Month/Year)

Paper-V
Basic Life Support

Time: Three Hour
Maximum Marks :70

Attempt **all** Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) **4x10=40**

Q1. What is BLS and write the steps involved in BLS.
Q2. Write down the procedure for Pediatric BLS.
Q3. What is AED, Describe in detail its procedure of application.
Q4. What is successful resuscitation team.
Q5. What is pediatric chain of survival.

Short Notes (Attempt any Four)

Q6. What is Bag Mask device. **6x5 =30**
Q7. Write in detail about CAB.
Q8. Write down the Heimlich maneuver.
Q9. Write down adult chain of survival.
Q10.Write down the difference between adult & pediatric compression.
Q11.Write in detail about infant CPR.
Q12. Ambu Bag
Q13. CPR in Covid Areas

MODEL PAPER

BPT-IV Year **GS**

BPT23S706T

Bachelor of Physiotherapy (BPT) Semester-VII
End of Semester Evaluation (Month/Year)

Paper-VI
General Surgery

Time: Three Hours
Maximum Marks :70

Attempt **all** Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) 4x10=40

Q1. Describe in detail about factors affecting wound healing
Q2. Write a note on indication & complications of blood transfusion and its management
Q3. Write classification of shock, pathophysiology of shock and management of haemorrhagic shock
Q4. Define ulcer, discuss classification and management of ulcer
Q5. Write down degrees of burn complications of burns and role of physiotherapy in their management

Short Answer Questions (Attempt any Six out of Eight) 6x5=30

Q1.Deep vein thrombosis
Q2. Rule of nine in burn
Q3.Blood transfusion
Q4.Surcical intensive care

Q5.Types of abdominal incision
Q6.Physiological response to surgery
Q7.Sinuses and fistula
Q8.Burn complications

MODEL PAPER

BPT-IV Year **NDT**

BPT23S707T

Bachelor of Physiotherapy (BPT) Semester-VII
End of Semester Evaluation (Month/Year)

Paper-VII
Neurodevelopmental Techniques
Time: Three Hours

Maximum Marks :70

Attempt **all** Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) 4x10=40

Q1.What are NDT assumptions based on theories of motor control?
Q2. Describe ICF model of Health and Disability. How to apply it within NDT practice?
Q3.Analyze a plan of care for an individual with disabilities based on NDT.
Q4.Describe anatomical features of Posture system?
Q5.Describe anatomical features of Movement system?

Short Answer Questions (Attempt any Six out of Eight) 6x5=30

Q1.Describe different components of NDT examination.
Q2.Role of assistive technology in handling.
Q3.Treatment skills for Head control.
Q4.Treatment skills for Trunk control
Q5.Principles of Growth and Development
Q6.Describe Motor learning.
Q7. Development from 0 – 6 months of age from motor aspect

Q8. . Principles of Neuro developmental Therapy

MODEL PAPER

BPT-IV Year **GS**

BPT23S707T

Bachelor of Physiotherapy (BPT) Semester-VIII
End of Semester Evaluation (Month/Year)

Paper-I
General Surgery

Time: Three Hours
Maximum Marks :70

Attempt **all** Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) 4x10=40

Q1. Describe in detail about factors affecting wound healing
Q2. Write a note on indication & complications of blood transfusion and its management
Q3. Write classification of shock, pathophysiology of shock and management of haemorrhagic shock
Q4. Define ulcer, discuss classification and management of ulcer
Q5. Write down degrees of burn complications of burns and role of physiotherapy in their management.

Short Answer Questions (Attempt any Six out of Eight)

Q6.Deep vein thrombosis

Q7. Rule of nine in burn

Q8.Blood transfusion

Q9.Surcical intensive care

Q10.Types of abdominal incision

Q11.Physiological response to surgery

Q12.Sinuses and fistula

Q13.Burn complications

MODEL PAPER

BPT-IV Year **PN&NC**

BPT23S802T

Bachelor of Physiotherapy (BPT) Semester-VIII
End of Semester Evaluation (Month/Year)

Paper-II
Physiotherapy in Neurological & Neurosurgical Conditions II

Time: Three Hours

Maximum Marks :70

Attempt **all** Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) 4x10=40

Q1.Common congenital and acquired musculoskeletal, neurological conditions of children.
Q2.Explain Bobath approach.
Q3 PNF approch in detail. Explain PNF determinants , principles and techniques.
Q4 Intracranial tumours classification sings and symptoms an their PT treatment.
Q5.Epilepsy :detail , classification and PT management.

Short Answer Questions (Attempt any Six out of Eight) 6x5=30
Q1.CP and its PT management.
Q2.Trigeminal neuralgia.
Q3.PIVD and its PT management
Q4.Sensory ataxia.
Q5.Roods approch
Q6.Extrapyramidal tracts

Q7.Polyneuropathy
Q8.PT management of Myasthenia gravis

MODEL PAPER

BPT-IV Year **PSC**

BPT23S803T

Bachelor of Physiotherapy (BPT) Semester-VIII
End of Semester Evaluation (Month/Year)

Paper-III
Physiotherapy in Surgical Conditions

Time: Three Hours

Maximum Marks :70

Attempt **all** Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) 4x10=40

Q1.Principles of tendon transfer. PT management of thew same
Q2.Cosmetic surgery. Explain all types of cosmetic surgeries.
Q3.Types of grafts along with its PT management.
Q4.Surgery of hand with emphasis on management of trauma and PT management
Q5. Incisions for cardiothoracic surgery .Explain in detail with PT management

Short Answer Questions (Attempt any Six out of Eight) 6x5=30

Q1.Atelactasis.
Q2.PT management after heart surgeries
Q3.PT management for Peripheral Vascular Disease

Q4. Pneumonectomy procedure PT management.

Q5.CABG and Pt management

Q6.complications of pneumonectomy and pt management

Q7.management of hand surgeries with PT management

Q8.Principles of Tendon transfer

MODEL PAPER

BPT-IV Year **EP&PII**

BPT23S804T

Bachelor of Physiotherapy (BPT) Semester-VIII
End of Semester Evaluation (Month/Year)

Paper-IV

EXERCISE PHYSIOLOGY AND SPORTS PHYSIOTHERAPY II

Time: Three Hours

Maximum Marks :70

Attempt **all** Questions

All the parts of one question s hould be answered at one place

Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) 4x10=40

Q1.Explain Female athletic triad/RED-s

Q2.Describe Musculo-skeletal problems, management, children with chronic illness and nutrition in younger athelete.

Q3.Explain the Principles of training & Rehabilitation in sports injuries

Q4.Explain the Principles of injury prevention

Q5.Describe in detail Shoulder- instability

Short Answer Questions (Attempt any Six out of Eight) 6x5=30

Q1.Rotator cuff injury

Q2.Biceps tendonitis and rupture

Q3.Acromioclavicular joint injuries

Q4.Tennis elbow

Q5.Carpal tunnel syndrome

Q6.Gamekeeper's thumb

Q7 Nutrition in sports

Q8.Older athletes physiological changes

MODEL PAPER

BPT-IV Year **PS&CS**

BPT23S805T

Bachelor of Physiotherapy (BPT) Semester-VIII
End of Semester Evaluation (Month/Year)

Paper-V

PLASTIC SURGERY AND CARDIOTHORACIC SURGERY

Time: Three Hours
Maximum Marks :70

Attempt **all** Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) 4x10=40

Q1. Principles of tendon transfer. Indications and contraindications for the same.

Q2.Cosmetic surgery. Explain all types of cosmetic surgeries.

Q3., Types of grafts along with its management.

Q4.Surgery of hand with emphasis on management of trauma and leprosy

Q5.- Incisions for cardiothoracic surgery .Explain in detail.

Short Answer Questions (Attempt any Six out of Eight) 6x5=30

Q1.Decortication,

Q2.Heart Disease Surgeries

Q3. Pneumonectomy procedure.

Q4.CABG

Q5.complications of pneumonectomy.

Q6.management of hand surgeries.

Q7.Principles of Tendon transfer

Q8.Leprosy.

MODEL PAPER

BPT-IV Year **ICTHE**

BPT23S806T

Bachelor of Physiotherapy (BPT) Semester-VIII
End of Semester Evaluation (Month/Year)

Paper-VI

Information And Communication Technology in Health Education

Time: Three Hours
Maximum Marks :70

Attempt **all** Questions
All the parts of one question should be answered at one place
Only one Supplementary Copy along with one main answer book is allowed

Long Answer Questions (Attempt any Four out of Five) 4x10=40

Q1.Discuss the introduction and history of computers?

Q2.Explain in detail about the use of Communication Technology.

Q3.Describe in detail the use of computers in physical therapy

Q4.Describe in detail about Supercomputers.

Q5. Explain in detail about ethics of copying software?

Short Answer Questions (Attempt any Six out of Eight) 6x5=30

Q1.What is Multimedia

Q2.Radiofrequency waves and Propagation

Q3.Google Application

Q4. Classification of Computers

Q5.Describe the purposes of storage media.

Q6. Usage of communications technology

Q7. Google Applications

Q8. Application Packages used in statistical analysis.