GYAN VIHAR SCHOOL OF HEALTH CARE
DEPARTMENT OF PHYSIOTHERAPY

CURRICULUM FOR ACADEMIC SESSION 2023-24 FOR THE FOLLOWING PROGRAMME

1. B.P.T. (BACHELOR OF PHYSIOTHERAPY) For all 4 years

S. No	Programs	Remarks
1	B.P.T. (BACHELOR OF PHYSIOTHERAPY)	I Sem to VIII Sem

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HIGH LIGHTS OF THE SYLLABI

A. COURSE NUMBER CODING SCHEME

Coding for all the papers has been done so as to make syllabi more systematic and easy to locate.
1. A course is identified by a course code designated by a string of alphanumeric characters and a course title.
2. In a course code, first two letters of the string indicate the Department/School offering the course and the later three numerals designate a particular course number. The letters symbolizing various Academic Department offering a course are:

BP Program subject
PC Proficiency in Co-curricular Activities
CP Elementary Computers
ES Environmental Studies

3. Course number
a. First Numerical digit denotes the level of the course that corresponds to the Year of Study.
b. Next two Numerical digits denote the number of the course, which will usually be odd for courses offered in the Odd Semester and even for courses offered in the Even Semester.
c. Lower levels corresponds the UG courses, while higher level the PG courses. Suggested levels will be as follows:

All UG Programmes
Level 1 to 4

EXAMPLES:

UG Programmes
For e.g. BP 203 BP denotes Bachelor of physiotherapy 2 denoted second Year

03 represent Course

B. CREDIT SYSTEM

Each academic year consists of two semesters and a summer term. The education system is organized around a credit system, which ensures continuous evaluation of the student's performance and provides at an optimum pace suited to one's ability or of credits depending upon the class contact hours. A minimum number of credits are to be completed in order to qualify for the award of degree. A minimum level of performance is necessary for satisfactory progress.

Each course, except for a few special courses, has a certain number of credits assigned to it depending on its lecture, tutorial and laboratory work contact hours in a week. Each course is coordinated by a member of the faculty called the course coordinator. He/she has the full responsibility for coordinating the course, faculty involved in the course, holding tests and awarding grades. In case of any difficulty, students are expected to approach the course coordinator for advice and clarification.

A letter grade with a specified number of grade points is awarded in each course for which a student is registered. A student's performance is measured by the number of credits that he/she has earned and by the weighted grade point average maintained by him/her. A minimum grade point average is necessary in order to qualify for the degree.

A total of minimum 150 credit points are necessary for the student enrolled to get B.P.T. degree out **of total 206** teaching credits offered overall in various courses.

C. COURSE OUTLOOK:

The course of B.P.T. (BACHELOR OF PHYSIOTHERAPY) is of 4 years with 6 months compulsory & rotatory internship. These 4 years are divided in 8 semesters, each of 6 months. After every semester an examination is conducted so that the teachers as well as students get to know their strengths and weakness and work on their weak points to have an overall development. Subjects are divided into two main categories- CORE and PROGRAM.

ELIGIBILITY

- Candidate should have passed 10+2 (12th standard) or equivalent examination with science stream i.e. Physics, Chemistry, Biology and English with 45% marks for general and 40% for SC/ST/OBC candidate.
- Candidate should have completed the minimum age of 17 years as on 31st December of the year admission to B.P.T. degree course.

OBJECTIVES & GOAL OF THE SYLLABI

Goal 1: Promotes health and wellness, examines, evaluates, diagnoses, prognoses, and provides intervention and manages physical therapy services for individuals with movement dysfunction.
Goal 2: Functions in a highly professional, ethical, legal, and culturally-competent manner and demonstrates commitment to society and the profession.
Goal 3: Communicates and educates the individual, family, community, and other professionals about rehabilitation, positive health, prevention, and wellness.
Goal 4: Critically evaluates and applies evidence as a basis for physical therapy practice, determines the effectiveness of intervention, and contributes to the body of knowledge in physical therapy.

SIGNIFICANCE AND CARRER OPTIONS OF B.P.T. (BACHELOR OF PHYSIOTHERAPY)

There are variety of areas where students coming out from University can apply there bunch of knowledge. 4 years course with completion of hands on experience of patients and hospital Training makes the student industry ready.

The Job prospects are:

- Students are capable to work in the field of sports & fitness.
- In hospital as consultant physiotherapist in Orthopaedics or Neurology departments
- After completion independent practice by setting up own clinic.
- Research and Development sector to provide new evidence based studies.
- In ICUs of various hospitals as Cardiorespiratory therapist..
- In special school for disabled as a Neuro Physiotherapist..
- Teaching and Research is a field to work with by **s**tudents having an interest in teaching and research can work with various University and Research Departments for exploring themselves as a Teacher and Researcher.
- Career in Govt. Organizations **as m**ost of organizations **as** Indian Railways, Army, ,RPSC,BHEL,AIIMS. A variety of scope exist here for our students.

Program Outcomes of BPT

On completion of the courses offered by the Department of Physiotherapy , the following outcomes are expected.

Identification of problem: Students will enable to asses, evaluate, diagnose & treat the conditions.

Knowledge Application: Perceived practical exposure in field of Physiotherapy through lab projects, paper presentations, seminars, case study, clinical & hospital postings

Team Spirit: Teaching students to work as a team as it plays an essential role in multidisciplinary dimension. Team spirit and coordination in patient handling, help student to work in hospitals.

Exposure of learning to practical work: Classroom deliveries are directly linked to lab experiments which incorporated better learning environment.

Multi-disciplinary knowledge gain: Inter disciplinary subjects skills are also accurate in student by the projects, clinical postings, seminars, paper presentations & voluntary work in industry.

S**cientific data Usage**: Students will develop the basic capability required to evaluate and illustrate basic scientific data. And use that data in their project and research work.

Entrepreneurship development: Eventually making the student aware about the skills and qualities indeed required for being a good entrepreneur.

Problem-Solving and Decision-Making Abilities: Enhance time management, resource management and organizational skills. Development and Implementation of Plans and organization of work to be completed in deadlines.

Modern Tool Usage: Study, select and apply best possible methods, procedures, resources and modern techniques related assessment tools with an understanding of the limitations.

Leadership Skills and Teamwork: Understand and consider motivational issues for leadership and team-building.

Communication Skills: Acquire good communication and writing skills.

Ethical Attitude: Knowledge of ethical responsibilities, honour personal values and apply them in professional and social contexts of decision making and take responsibility for the outcomes associated with the decisions.

1. CREDIT DISTRIBUTION

The credit distribution for each program in the four categories of University Core, Program Core, University Elective and Program Elective are given as follows:

Year	Semester	University Core	Program Core	Program Elective	Total credits
I	**AUTUMN/PAVAS**	12	14	-	26
	SPRING/BASANT	10	18	-	28
II	**AUTUMN/PAVAS**	3	20	6	29
	SPRING/BASANT	3	19	3	25
III	**AUTUMN/PAVAS**	3	20	3	26
	SPRING/BASANT	3	22	3	28
IV	**AUTUMN/PAVAS**	3	21	6	30
	SPRING/BASANT	1	22	6	29
	Total	38	156	27	221

2. No. of Total Courses Being offered (Semester wise):

S.No.	Semester	Number of Courses	Credits
1.	B.P.T Ist sem	13	26
2.	B.P.T II sem	13	28
3.	B.P.T III sem	12	29
4.	B.P.T IV sem	11	25
5.	B.P.T V sem	11	26
6.	B.P.T VI sem	13	28
7.	B.P.T VII sem	14	30
8.	B.P.T VIII sem	14	29
	Total	101	221

Signature

Dean/Principal/HoD

3. **All approvals at the department level to be taken to the University BoS meeting.**

Signature
Convener-BoS

Signature
Dean/Principal/HoD

[Curriculum- Bachelor of Physiotherapy (Regular Program / Specialization] Session 2023-24

GYAN VIHAR SCHOOL OF HEALTH CARE
Teaching and Examination Scheme for B.P.T. (BACHELOR OF PHYSIOTHERAPY
EFFECTIVE FROM ACADEMIC SESSION 2023-24

Year: I **Semester: AUTUMN/PAVAS**

S. No.	Course Code	Course Name	Credits	Contact Hrs/Wk.			Exam Hrs.	Weightage (in%)	
				L	T/S	P		CIE	ESE
A		**University Core**							
	PC101	Proficiency and Co- Curricular Activities-I	2	2				100	
	UC 101	Environmental Studies	2	2	0	0	3	40	60
	UC 103	Human Value & Ethics	1	2	0	0	3	40	60
	UC 105	Anandam- An Exercise in Trusteeship (A-ET)	2	0	0	2	--	100	---
	UC 111	English Language- I	2	2	0	0	3	40	60
	UC 113	Elementary Computers	3	3	0	0	3	40	60
B		**Program Core**							
	BP 101	Human Anatomy-I	3	3	0	0	3	40	60
	BP151	Human Anatomy –I Lab	1	0	0	2	3	60	40
	BP 103	Human Physiology-I	3	3	0	0	3	40	60
	BP153	Human Physiology-I Lab	1	0	0	2	3	60	40
	BP 105	Biochemistry	2	2	0	0	3	40	60
	BP107	Psychology & Psychiatry	2	2	0	0	3	40	60
		Field Visit- (Visit, Report, Presentation)-I	2	0	0	2	3	100	-
		TOTAL (Credits of Core Courses)	**26**						

L= Lecture **T=Tutorial** **CIE=Continuous Internal Evaluation**
S= Seminar **P= Practical** **ESE= End Semester Examination**

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EFFECTIVE FROM ACADEMIC SESSION 2023-24

Year: I **Semester: SPRING / BASANT**

S. No.	Course Code	Course Name	Credits	Contact Hrs/Wk.			Exam Hrs.	Weightage (in %)	
				L	T/S	P		CIE	ESE
A		**University Core**							
	PC102	Proficiency and Co- Curricular Activities-II	2	2				100	
	UC 102	Cyber Security (Basics)	3	3			3	40	60
	UC 104	Indian Heritage & Culture	3	3			3	40	60
	UC 108	English Language-II	2	2	0	0	3	40	60
B		**Program Core**							
	BP102	HUMAN ANATOMY-II	3	3	0	0	3	40	60
	BP152	HUMAN ANATOMY-II(LAB)	1	0	0	2	3	60	40
	BP104	HUMAN PHYSIOLOGY-II	3	3	0	0	3	40	60
	BP154	HUMAN PHYSIOLOGY -II (LAB)	1	0	0	2	3	60	40
	BP112	FUNDAMENTALS OF EXERCISE THERAPY	3	3	0	0	3	40	60
	BP114	FUNDAMENTALS OF EXERCISE THERAPY LAB	1	3	0	0	3	40	60
	BP156	FUNDAMENTALS OF ELECTRO THERAPY	3	0	0	2	3	60	40
	BP158	FUNDAMENTALS OF ELECTRO THERAPY LAB	1	0	0	2	3	60	40
		Field Visit- (Visit, Report, Presentation)-II	2	0	0	2	3	100	-
		TOTAL (Credits of Core Courses)	**28**						

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Year: II **Semester: AUTUMN/PAVAS**

S. No.	Course Code	Course Name	Credits	Contact Hrs/Wk.			Exam Hrs.	Weightage (in %)	
				L	T/S	P		CIE	ESE
A		**University Core**							
	PC 201	Proficiency and Co- Curricular Activities-III	2	2				100	
	EM 201	Employability Skills- I	1		2		3	100	
B		**Program Core**							
	BP201	PHARMACOLOGY-I	3	3	0	0	3	40	60
	BP203	PATHOLOGY & MICROBIOLOGY	4	4	0	0	3	40	60
	BP211	EXERCISETHERAPY-I	3	3	0	0	3	40	60
	BP255	EXERCISETHERAPY-I LAB	1	0	0	2	3	60	40
	BP213	ELECTROTHERAPY -I	3	3	0	0	3	40	60
	BP257	ELECTROTHERAPY -I LAB	1	0	0	2	3	60	40
	BP215	BIOMECHANICS & KINESIOLOGY -I	3	3	0	0	3	40	60
		Field Visit- (Visit, Report, Presentation)-III	2	0	0	2	3	100	--
C		**Open Elective (any one)**							
1	BPMOC3	**MOOC (through SWAYAM/NPTEL etc) Under Credit Transfer Scheme**	3	3	0	0	3	40	60
		Introduction to Yoga	3	3	0	0	3	40	60
		TOTAL (Credits of Core Courses)	29						

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Year: II **Semester: SPRING / BASANT**

S. No.	Course Code	Course Name	Credits	Contact Hrs/Wk.			Exam Hrs.	Weightage (in %)	
				L	T/ S	P		CIE	ESE
A		**University Core**							
	PC 202	Proficiency and Co- Curricular Activities-IV	2	2				100	
	EM 202	Employability Skills- II	1		2		3	100	
B		**Program Core**							
	BP202	PHARMACOLOGY-II	3	3	0	0	3	40	60
	BP204	COMMUNITY MEDICINE	3	3	0	0	3	40	60
	BP210	EXERCISETHERAPY-II	3	3	0	0	3	40	60
	BP256	EXERCISETHERAPY-II LAB	1	0	0	2	3	60	40
	BP212	ELECTROTHERAPY-II	3	3	0	0	3	40	60
	BP258	ELECTROTHERAPY-II LAB	1	0	0	2	3	60	40
	BP2014	BIOMECHANICS & KINESIOLOGY- II	3	3	0	0	3	40	60
		Field Visit- (Visit, Report, Presentation)-IV	2	0	0	2	3	100	
C		**Open Elective (any one)**							
1	BPMOC4	**MOOC (through SWAYAM/NPTEL etc) Under Credit Transfer Scheme**	3	3	0	0	3	40	60
		TOTAL (Credits of Core Courses)	**25**						

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GYAN VIHAR SCHOOL OF HEALTH CARE

Teaching and Examination Scheme for B.P.T. (BACHELOR OF PHYSIOTHERAPY EFFECTIVE FROM ACADEMIC SESSION 2023-24

Year: III **Semester: AUTUMN/PAVAS**

S. No.	Course Code	Course Name	Credits	Contact Hrs/Wk.			Exam Hrs.	Weightage (in %)	
				L	T/S	P		CIE	ESE
A		**University Core**							
	PC301	Proficiency and Co- Curricular Activities-V	2	2				100	
	EM 301	Employability Skills- III	1		2		3	100	
B		**Program Core**							
	BP301	Clinical Based Rehabilitation	3	3	0	0	3	40	60
	BP307	Clinical Orthopedics & Traumatology- I	3	3	0	0	3	40	60
	BP355	Clinical Orthopedics & Traumatology- I LAB	1	0	0	2	3	60	40
	BP309	Clinical Neurology & Neurosurgery -I	3	3	0	0	3	40	60
	BP357	Clinical Neurology & Neurosurgery –I LAB	1	0	0	2	3	60	40
	BP311	Clinical surgery & Obstetrics & Gynaecology	3	3	0	0	3	40	60
		Field Visit- (Visit, Report, Presentation)-V	2	0	0	2	3	100	-
		Clinical Training	4	0	0	8	3	100	-
C		**Open Elective (any one)**							
1	BPMOC5	**MOOC (through SWAYAM/NPTEL etc) Under Credit Transfer Scheme**	3	3	0	0	3	40	60
		TOTAL (Credits of Core Courses)	**26**						

Clinical postings in hospital & clinic for 72 hours during 5th semester is compulsory.

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Year: III **Semester: SPRING / BASANT**

S. No.	Course Code	Course Name	Credits	Contact Hrs/Wk.			Exam Hrs.	Weightage (in %)	
				L	T/ S	P		CIE	ESE
A		**University Core**							
	PC 302	Proficiency and Co- Curricular Activities-VI	2	2				100	
	EM 302	Employability Skills- IV	1		2		3	100	
B		**Program Core**							
	BP304	Clinical Cardiothoracic & Respiratory Conditions	3	3	0	0	3	40	60
	BP354	Clinical Cardiothoracic & Respiratory Conditions (Lab)	1	0	0	2	3	40	60
	BP306	Clinical Medicine & Pediatrics	3	3	0	0	3	40	60
	BP356	Clinical Medicine & Pediatrics (Lab)	1	0	0	2	3	40	60
	BP308	Clinical Orthopedics & Traumatology- II	3	3	0	0	3	40	60
	BP358	Clinical Orthopedics & Traumatology- II LAB	1	0	0	2	3	40	60
	BP310	Clinical Neurology & Neurosurgery -II	3	3	0	0	3	40	60
	BP360	Clinical Neurology & Neurosurgery –II LAB	1	0	0	2	3	40	60
		Field Visit- (Visit, Report, Presentation)-VI	2	0	0	2	3	100	
		Clinical Training	4	0	0	8	3	100	-
C		**Open Elective (any one)**							
1	BPMOC6	**MOOC (through SWAYAM/NPTEL etc) Under Credit Transfer Scheme**	3	3	0	0	3	40	60
		TOTAL (Credits of Core Courses)	**28**						

Clinical postings in hospital & clinic for 1 month during 6th semester is compulsory.

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Teaching and Examination Scheme for B.P.T. (BACHELOR OF PHYSIOTHERAPY
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Year: IV **Semester: AUTUMN/PAVAS**

S. No.	Course Code	Course Name	Credits	Contact Hrs/Wk.			Exam Hrs.	Weightage (in %)	
				L	T/S	P		CIE	ESE
A		**University Core**							
	PC401	Proficiency and Co- Curricular Activities-VII	2	2				100	
	EM 401	Group Discussion, Aptitude & Reasoning -I	1		2		3	100	
B		**Program Core**							
	BP401	PT in Orthopaedic Conditions-I	3	3	0	0	3	40	60
	BP403	PT in Neurological Conditions-I	3	3	0	0	3	40	60
	BP405	PT in Cardiothoracic & Respiratory Conditions	3	3	0	0	3	40	60
	BP407	PT in Surgical, Obstetrics & Gynecological Conditions	3	3	0	0	3	40	60
	BP451	PT in Orthopaedic Conditions-I (Lab)	1	0	0	2	3	60	40
	BP453	PT in Neurological Conditions-I (Lab)	1	0	0	2	3	60	40
	BP455	PT in Cardiothoracic & Respiratory Conditions (Lab)	1	0	0	2	3	60	40
	BP457	PT in Surgical, Obstetrics & Gynaecological Conditions (Lab)	1	0	0	2	3	60	40
		Field Visit- (Visit, Report, Presentation)-VII	1	0	0	2	3	100	--
		Clinical Training	4	0	0	8	3	100	-
C		**Open Elective (any one)**							
1	BPMOC7	**MOOC (through SWAYAM/NPTEL etc) Under Credit Transfer Scheme**	3	3	0	0	3	40	60
	BP	Physiotherapy Ethics & Values	3	3	0	0	3	40	60
		TOTAL (Credits of Core Courses)	**30**						

Clinical postings in hospital & clinic for 1 month hours during 7th semester is compulsory.

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S= Seminar **P= Practical** **ESE= End Semester Examination**

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[Curriculum- Bachelor of Physiotherapy (Regular Program / Specialization] Session 2023-24

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Year: IV **Semester: SPRING / BASANT**

S. No.	Course Code	Course Name	Credits	Contact Hrs/Wk.			Exam Hrs.	Weightage (in %)	
				L	T/ S	P		CIE	ESE
A		**University Core**							
	EM 402	Group Discussion, Aptitude & Reasoning -II	1		2		3	100	
		Program Core							
B	BP402	PT in Orthopaedic Conditions-II	2	2	0	0	3	40	60
	BP404	PT in Neurological Conditions-II	2	2	0	0	3	40	60
	BP406	PT in Medical & Paediatric Conditions	2	2	0	0	3	40	60
	BP408	Sports Rehabilitation	2	2	0	0	3	40	60
	BP410	Research & Biostatistics	2	2	0	0	3	40	60
	BP452	Research Project	2	0	0	2	3	100	
	BP452	PT in Orthopaedic Conditions-II (Lab)	1	0	0	2	3	60	40
	BP454	PT in Neurological Conditions-II (Lab)	1	0	0	2	3	60	40
	BP456	PT in Medical & Paediatric Conditions (Lab)	1	0	0	2	3	60	40
	BP458	Sports Rehabilitation (Lab)	1	0	0	2	3	60	40
		Field Visit- (Visit, Report, Presentation)-VIII	2	0	0	2	3	100	--
		Clinical Training	4	0	0	8	3	100	-
C		**Open Elective (any one)**							
1		**MOOC (through SWAYAM/NPTEL etc) Under Credit Transfer Scheme**	3	3	0	0	3	40	60
		Enterpreneurship	3	3	0	0	3	40	60
		TOTAL (Credits of Core Courses)	**29**						

Clinical postings in hospital & clinic for 1month hours during 8th semester is compulsory.

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GYAN VIHAR SCHOOL OF HEALTH CARE
DEPARTMENT OF PHYSIOTHERAPY
Effective from the academic session 2023-24

DETAILED SYLLABUS

Mapping Course Outcomes with Program Outcomes:

Course outcomes	1	2	3	4
1	S	S	S	S

S: Strong relationship M: Moderate relationship

Course Assessment and Evaluation:

The Course will be delivered through lectures, class room interaction, exercises and self-study cases.

Method	What		To whom	When/where (Frequency in the course)	Max Marks	Evidence collected	Contributing to course outcomes
DIRECT ASSESSMENT	CIE	Mid Term Test	Student	Two tests	20	Midterm Answer books	1 to 4
		Weekly Test		Two Weekly Test	10	Weekly Test Copies	1 to 4
		Graded Assignments		Two Assignments	10	Log of record	1 to 4
				Total	**40**		
	ESE	End Sem Evaluation		End of the course	60	Answer scripts at BTE	1 to 4
INDIRECT ASS	Student feedback		Students	Middle of the course	-NA-	Feedback forms	1 to 4, delivery of the course

	End of Course survey		End of course		Questionnaire	1 to 4, Effectiveness of delivery of instructions and assessment methods

CIE – Continuous Internal Evaluation **ESE** –End Semester Examination

Composition of Educational Components:

Questions for CIE and SEE will be designed to evaluate the various educational components (Bloom's taxonomy) such as:

Sl. No.	Educational Component	Weightage (%)
1	Remembering and Understanding	35
2	Applying the knowledge acquired from the course	25
3	Analysis and Evaluation	40

Guidelines for Question Paper Setting:

1. The question paper must be prepared based on the blue print without changing the weight age of model fixed for each unit.
2. The question paper pattern provided should be adhered to
   - The paper should have 10 questions in all, wherein it will have 2 questions from each unit.
   - Student shall be asked to attempt in all 5 questions, 1 Question from each unit.
   - Student shall be given Internal choice in every Unit.
3. Questions should not be set from the recapitulation topics.

Bachelor of Physiotherapy (BPT) 1st Semester

Course Title: Human Anatomy-I		Course Code	: BP 101
Semester	: **I**	Core / Elective	: **Program core**
Teaching Scheme in Hrs (L:T:P)	**: 3:0:0**	Credits	: **3 Credits**
Type of course	: **Lecture + Assignments**	Total Contact Hours	: 36
Continuous Internal Evaluation	: **40 Marks**	ESE	: **60 Marks**

Course Objectives:

- Recognize essential terminology necessary to describe fundamental relationship & orientation of structure in human body.
- Identify osteology of human skeleton in both gross & medical imaging.
- Differentiate muscles of human body with their attachments and function
- Distinguish various components of CVS & respiratory system
- Recall components of sensory system & endocrine system.

Course Content:

Topic and Contents	Hours	Marks
UNIT 1: Anatomy basics	6	12
• Introduction, terminologies & anatomical terms meanings • Skeleton & Joints • Muscles • CVS • Lymphatic system • Nervous system • Skin & fascia • Connective tissue • Embryology • Histology		
UNIT 2: Upper extremity	6	12

• Pectoral region • Axilla • Back • Scapular region • Arm • Forearm & hand		
UNIT 3: Thorax	12	18
• Wall of thorax • Thoracic cavity & pleura • Lungs • Mediastinum • Pericardium & heart • SVC & IVC, Aorta, pulmonary trunk • Trachea, oesophagus & thoracic duct		
UNIT 4: Lower Extremity	6	8
• Front, medial & back of thigh • Gluteal region • Popliteal fossa • Front, lateral, medial side of leg & dorsum of foot • Back of leg • Sole of foot • Arches of foot		
UNIT 5: Nerves, veins & lymphatics	6	4
• Cutaneous nerves , superficial veins & lymphatic drainage of Upper extremity, thorax & lower extremity		
TOTAL	**36**	**60**

Reference:

1. Extremeties by Quining Wasb
2. Neuroanatomy by Snell
3. Human anatomy by BD Chaurasia
4. Human anatomy by Inderbir Singh
5. Grays anatomy

Semester	: **I**	Core / Elective: **Program Core**	
Teaching Scheme in Hrs (L:T:P)	: **3:0:0**	Credits	: 3 **Credits**
Type of course: **Lecture + Assignments**		Total Contact Hours	: 36
Continuous Internal Evaluation	: **40 Marks**	ESE	: **60 Marks**

Course Objectives:

1 . To acquire knowledge of relative contribution of each organ system in maintenance of homeostatsis

Course Content:

Topic and Contents	Hours	Marks
UNIT-1: General physiology • Cell: morphology, Structure and function of cell organelles • Transport across cell membrane • Homeostasis • CELL JUNCTION	5	10
UNIT-2: Blood • Introduction-composition & function of blood • W.B.C., R.B.C., Platelets formation & functions, Immunity • Plasma: composition, formation & functions, Plasma Proteins:-types & functions • Blood Groups- types , significance, determination • Hemoglobin & FORMATION • Haemostasis, BLOOD COAGULATION • ERYTHROPOEISIS • LYMPHATIC SYSTEM & SPLEEN	8	15
UNIT-3: Cardiovascular system • Conducting system-components, impulse conduction • STRUCTURE OF HEART & Heart valves • Cardiac cycle- definition, phases of cardiac cycle • Cardiac output- definition, normal value, determinants. Stroke volume and its regulation • Heart rate and its regulation • Arterial pulse, Blood pressure-definition, normal values, factors affecting blood pressure • Shock-definition, classification, causes and features • Cardiovascular changes during exercise	10	15
UNIT-4: **MUSCLE PHYSIOLOGY** • CLASSIFICATION & STRUCTURE • NMJ • PROPERTIES	8	10

• SMOOTH MUSCLES • ENDURANCE MUSCLE		
UNIT 5: Renal system • Physiology of kidney and urine formation • Physiology of urinary bladder • RFT • GLANDS OF SKIN • WATER EXCRETION & ACID BASE BALANCE	5	10
TOTAL	**36**	**60**

Reference:

1. Essentials of Medical Physiology-K.Sembulingam
2. Textbook of Medical Physiology- Guyton
3. Textbook of Physiology- A.K.Jain

Course Title: **BIOCHEMISTRY**	Course Code: BP 105
Semester : **I**	Core / Elective: **Program Core**
Teaching Scheme in Hrs (L:T:P) : **2:0:0**	Credits : 2 **Credits**
Type of course: **Lecture + Assignments**	Total Contact Hours : 24
Continuous Internal Evaluation : **40 Marks**	ESE : **60 Marks**

Course Objectives:

To understand the fundamental chemical principle that govern complex biological system.

Course Content:

Topic and Contents	Hours	Marks
UNIT-1: Acid-Base, Water &Electrolyte balance • Acids, bases and buffers, pH. Buffer systems of the body, bicarbonate buffer system Role of lungs and kidneys in acid base balance, Acid base imbalance. • Water distribution in the body, Body water, water turnover, Regulation of water balance: role of ADH and thirst centre. Osmolarity. Distribution of electrolytes. Electrolyte balance: Role of aldosterone, rennin angiotensin system and ANF	6	10
UNIT-2: Carbohydrate, protein & lipids metabolism • Introduction, Glycolysis – Aerobic, Anaerobic Citric acid cycle, Substrate level phosphorylation. Glycogen metabolism – Glycogenesis, Glycogenolysis, Metabolic disorders glycogen, Gluconeogenesis, Cori cycle,Hormonal regulation of glucose, Glycosuria, Diabetes mellitus.	6	15

• Introduction to lipid metabolism, Lipolysis, Oxidation of fatty acids - oxidation of fatty acids, Lipogenesis - Denovo synthesis of fatty acids, chain elongation, desaturation, triacylglycerol synthesis, fat metabolism in adipose tissues, Ketone body metabolism: Ketone body formation (ketogenesis), utilization (ketolysis), ketosis, Rothera's test. • Cholesterol metabolism: synthesis, degradation, cholesterol transport, Hypercholesterolemia and its effects (atherosclerosis and coronary heart diseases) Hypocholesterolemic agents, Common hyperlipoproteinemia, Fatty liver		
UNIT-3: Vitamins & minerals • Vitamins -Definition, classification according to solubility Individual vitamins - Sources, Coenzyme forms, functions, RDA, digestion, absorption and transport, deficiency and toxicity. • Mineral -Definition, Sources, RDA, Digestion, absorption, transport, excretion, functions, disorder of Individual minerals - Calcium, phosphate, iron, Magnesium, fluoride, selenium, molybdenum, copper. Phosphate, calcium and iron in detail • ENZYMES- Definition, Active site, Cofactor (Coenzyme, Activator), Proenzyme. Classification with examples, Factors effecting enzyme activity, Enzyme inhibition and significance, Isoenzymes, Diagnostic enzymology (clinical significance of enzymes) •	6	15
UNIT-4: Hormones & organ function test • Various hormones secreted by different glands • Various test regarding monitoring of hormones	3	10
UNIT 5: Nucleotide and Nucleic acid Chemistry • Nucleotide composition, functions of free nucleotides in body.Nucleic acid (DNA and RNA) chemistry: Difference between DNA and RNA, Structure of DNA +(Watson and Crick model), Functions of DNA. Structure and functions of tRNA, r RNA, mRNA.	3	10
TOTAL	**24**	**60**

Reference books

1. MURRAY [ROBERT KK], Harper's Bio Chemistry Ed 24, Prentice Hall. 1996, p925,
2. RAMAKRISHNA [S], PRASANNA [KG], RAJAN [R], Text Book of Medical Biochemistry, Ed 1, orient Langman, Bombay 1980, p717.
3. VASUDEVAN [DM] and SREE KUMARI [S], Text Book of Bio Chemistry for Medical students, Ed 1, Jaypee Brothers

Course Title: **Psychology & Psychiatry**	Course Code: BP107
Semester : **I**	Core / Elective: **Program Core**
Teaching Scheme in Hrs (L:T:P) : **2:0:0**	Credits : 2 **Credits**
Type of course: **Lecture + Assignments**	Total Contact Hours : 24
Continuous Internal Evaluation : **40 Marks**	ESE : **60 Marks**

Course Objectives:

- The study of various behavioral patterns of individuals, theories of development, normal and abnormal aspects of motor, social, emotional and language development, communication and interaction skills appropriate to various age groups.
- The study of these subjects will help the student to understand their clients while assessment and while planning appropriate treatment methods.

Course Content:

Topic and Contents	Hours	Marks
UNIT-1: Introduction to Psychology	6	10
• Meaning ,school of Psychology • Fields of application of Psychology • Influence of heredity & environment on the individual		
UNIT-2: Learning, Memory & Emotions	6	15

• Theories And Principles Of Learning
• Learning Disabilities
• Types, Theories Of Memory
• Forgetting
  • Methods To Improve Memory
• Theories of emotions and stress
• Emotional and behavioral disorders of childhood and adolescence
• Disorders of under and over controlled behavior
  • Eating disorders		

UNIT-3: Thinking, motivation, Attitude & Intelligence	6	15

• Process of thinking • Problem solving • Decision making and creative thinking. • Theories and types of Motivation • Theories attitudes and behavior • Factors in attitude change. • Theories of intelligence, I.Q. • Intelligence tests and their uses.		
UNIT-4: Basics of Psychiatry & Disorders	3	10
• Definition/criteria of Normality and Abnormality and factor contributing to normal mental health. • Neurotic disorders. • Psychotic disorders. • Psychosomatic disorders.		
UNIT 5: Psychotherapy Approaches	3	10
• Organic mental disorders. • Substances abuse disorders • Problems in adjustment in old age. • Psychotherapy • Child psychiatry		
TOTAL	**24**	**60**

Course Title: Human Anatomy –I lab		Course Code: BP 151	
Semester	: **I**	Core / Elective: **Program Core**	
Teaching Scheme in Hrs (L:T:P)	: **0:0:2**	Credits	: 2
Type of course: **Lecture + Assignments**		Total Contact Hours	: 24 hrs
Continuous Internal Evaluation	: **60 Marks**	ESE	: **40 Marks**

PRACTICAL

S.No.	Name Of Topic	Marks
1	1) Typesof joint	2
2	1) Clavicle, scapula, humerus, ulna, radius,	2
3	carpals, metacarpals, phalanges	2
4	1) Muscles around shoulder joint	2
5	1) muscles around elbow joint	2
6	1) muscles around wrist & hand	2
7	1) Nerves- Radial, median, ulnar	2
8	Sternus & ribs	2
9	LUNGS	2
10	HEART	2
	VIVA	20
	TOTAL	40

Course Title: Human Physiology-I lab		Course Code: BP 153
Semester	: **I**	Core / Elective: **Program Core**
Teaching Scheme in Hrs (L:T:P)	: **0:0:2**	Credits : 2

Type of course: **Lecture + Assignments**	Total Contact Hours : 24 hrs
Continuous Internal Evaluation : **60 Marks**	ESE : **40 Marks**

PRACTICAL

S.No.	Name Of Topic	Marks
1	COMPOUND MICROSCOPE	2
2	CELL Observation under microscope WBC, RBC, PLATELET	2
3	To determine BT & CT	2
4	To check Ph of blood by litmus paper	2
5	To check Ph of Urine by litmus paper	2
6	To check blood sugar level by glucometer	2
7	Use of stethescope & its parts	2
8	BP measurement by sphygmomanometer	2
9	Measurement of Pulse rate / heart rate	
10	Cardiac ausultation	
	VIVA	20
	TOTAL	40

Bachelor of Physiotherapy (BPT) 2nd Semester

Course Title: Human Anatomy-II	Course Code: BP102
Semester : **II**	Core / Elective: **Program Core**
Teaching Scheme in Hrs (L:T:P) : **3:0:0**	Credits : 3
Type of course: **Lecture + Assignments**	Total Contact Hours : 36 hrs
Continuous Internal Evaluation : **40 Marks**	ESE : **60 Marks**

Course Objectives:

- Recognize essential terminology necessary to describe fundamental relationship & orientation of structure in human body.
- Identify osteology of human skeleton in both gross & medical imaging.
- Differentiate muscles of human body with their attachments and function

Course Content:

Topic and Contents	Hours	Marks
UNIT 1: ABDOMEN -1	8	12
• Anterior abdominal wall • Male external genital organ • Abdominal cavity & peritoneum • Abdominal part of oesophagus & stomach • Small & large intestine • Large blood vessels of gut • Extrahepatic biliary apparatus • Spleen, pancreas & liver • Kidney & ureter		
UNIT 2: ABDOMEN- 2	8	12
• Suprarenal gland & chromaffin system • Diaphragm • Posterior abdominal wall • Perineum • Contents of pelvis • Urinary bladder and urethra • Reproductive organs of male & female • Rectum & anal canal		

• Walls of pelvis		
UNIT 3: HEAD & NECK - 1 • Scalp, temple & face • Side of neck • Anterior triangle of neck • Parotid region • Temporal & infratemporal regions • Submandibular regions • Structures present in neck • Prevertebral & paravertebral region • Back of neck	8	18
UNIT 4: HEAD & NECK-2 • Content of vertebral canal • Cranial cavity • Content of orbit • Mouth of pharynx • Nose & paranasal sinuses • Larynx • Tongue • Ear • Eyeball	6	8
UNIT 5: BRAIN • Introduction • Meninges • Spinal cord • Cranial nerves • Brain stem • Cerebellum • 4th ventricle • Cerebrum • 3rd & lateral ventricle • Limbic system • Neural pathways • Reticular formations • Blood supply of SC & brain	6	4
TOTAL	**36**	**60**

Reference:

6. Extremeties by Quining Wasb
7. Neuroanatomy by Snell
8. Human anatomy by BD Chaurasia
9. Human anatomy by Inderbir Singh
10. Grays anatomy

Course Title: Human Physiology-II		Course Code: BP104	
Semester	: **II**	Core / Elective: **Program Core**	
Teaching Scheme in Hrs (L:T:P)	: **3:0:0**	Credits	: 3
Type of course: **Lecture + Assignments**		Total Contact Hours	: 36 hrs
Continuous Internal Evaluation	: **40 Marks**	ESE	: **60 Marks**

Course Objectives: To acquire knowledge of relative contribution of each organ system in maintenance of homeostasis

Course Content:

Topic and Contents	Hours	Marks
UNIT-1: Nerve Muscle Physiology	8	15
• Muscles- classification, structure, properties, Excitation contraction coupling • Motor unit, EMG, factors affecting muscle tension, • Muscle tone, fatigue, exercise • Nerve –structure and function of neurons, classification, properties • Resting membrane potential & Action potential their ionic basis • All or None phenomenon • Neuromuscular transmission • Ionic basis of nerve conduction • Concept of nerve injury & Wallerian degeneration • Synapses • Electrical events in postsynaptic neurons • Inhibition & facilitation at synapses • Chemical transmission of synaptic activity • Principal neurotransmitters.		
UNIT-2: Nervous system	8	15
• Introduction, central and peripheral nervous system, functions of nervous system • Reflexes- monosynaptic, polysynaptic, superficial, deep &withdrawal reflex • Sense organ, receptors, electrical & chemical events in receptors • Sensory pathways for touch, temperature, pain, proprioception &		

others • Control of tone & posture: Integration at spinal, brain stem, cerebellar, basal ganglion levels, along with their functions • Motor mechanism: motor cortex, motor pathway:the descending tracts- pyramidal & extra pyramidal tracts-origin, course, termination & functions. Upper motor neuron and lower motor neuron paralysis. • Spinal cord lesions- complete transection & hemisection of the spinal cord • Autonomic nervous system :features and actions of parasympathetic & sympathetic nervous system • Hypothalamus • Higher functions of nervous system • Special senses- eye, ear, nose, mouth		
UNIT-3: Endocrine system • Physiology of the endocrine glands – Pituitary, Pineal Body, Thyroid, Parathyroid, Adrenal, Gonads, Thymus, Pancreas. Hormones secreted by these glands, their classifications and function	8	10
UNIT-4: Respiratory system • Mechanics of respiration • Lung volumes and capacities • Pulmonary circulation, transport of respiratory gases • Factors affecting respiration • Regulation of respiration-neural regulation, voluntary control and chemical regulation • Hypoxia, Hypercapnoea, Hypocapnoea • Artificial respiration • Disorders of respiration- dyspnoea, orthopnoea, hyperpnoea, hyperventilation, apnoea, tachypnoea • Respiratory changes during exercise •	6	10
UNIT 5: Digestive System • Digestion & absorption of nutrient • Gastrointestinal secretions & their regulation • Functions of Liver & Stomach	6	10
TOTAL	**36**	**60**

Course Title: FUNDAMENTALS OF EXERCISE THERAPY		Course Code: BP112	
Semester	: **II**	Core / Elective: **Program Core**	
Teaching Scheme in Hrs (L:T:P)	: **3:0:0**	Credits	: 3
Type of course: **Lecture + Assignments**		Total Contact Hours	: 36 hrs
Continuous Internal Evaluation	: **40 Marks**	ESE	: **60 Marks**

Course Objectives: In this course, the students will learn the principles and effects of exercise as a therapeutic modality and will learn the techniques in the restoration of physical functions

Course Content:

Topic and Contents	Hours	Marks
UNIT-1: Introduction & Methods of Testing • Force, composition of force, gravity, LOG, COG, equilibrium, angle of pull. • Axis & plane, speed, velocity, momentum, acceleration, inertia, friction & laws of motion. • Simple machine- lever, springs, wedge, screw, pulleys, pendulum. • Elasticity – Definition,Stress,Strain, HOOKE'S Law • Functional tests • Goniometer-parts, types, principles, uses., Limitations of goniometry, Techniques for measurement of ROM for all peripheral joints	10	15
UNIT-2: Relaxation ,Individual and Group Exercises • Body lever, force applied to body lever, types of movement , types of muscle contraction, types of muscle work, range of muscle work, strength of muscle contraction, group actions of muscle, pattern of movement , timing, rhythm, nervous control of movement. • Introduction to exercise therapy – aims, techniques, approach to patient, assessment, methods of testing, planning the treatment. • Reflex movement, stretch reflex, postural reflex Definitions: Muscle Tone, Postural tone, Voluntary Movement, Degrees of relaxation, Pathological tension in muscle, Stress mechanics, types of stresses, Effects of stress on the body mechanism, Indications of relaxation, Methods & techniques of relaxation-Principles & uses: General, Local, Jacobson's, Mitchel's, additional methods. Advantages and Disadvantages, Organisation of Group exercises, Recreational Activities and Sports	8	15
UNIT-3: Active & passive movements 2. Types of active movements, principles, techniques, practical approaches	6	10
	6	10

UNIT-4: 1. Types , indications & contraindications of PROM 2. Bed Rest-Its necessity & Complications. 3. Starting & derived positions		
UNIT 5: Hydrotherapy	6	10
• Definitions, Goals and Indications, Precautions and Contraindications, Properties of water, Use of special equipments, techniques, Effects and uses, merits and demerits		
TOTAL	**36**	**60**

Course Title :- FUNDAMENTALS OF ELECTRO THERAPY	Course Code: BP156
Semester : **II**	Core / Elective: **Program Core**
Teaching Scheme in Hrs (L:T:P) : **3:0:0**	Credits : 3
Type of course: **Lecture + Assignments**	Total Contact Hours : 36 hrs
Continuous Internal Evaluation : **40 Marks**	ESE : **60 Marks**

Course Objectives: In this course the student will learn the Principles, Techniques, Effects, Indication, Contra-Indication. and the dosage parameter for various indications of electro therapeutic modalities in the restoration of physical function. The objective of this course is that after lectures,demonstration, practical and clinics the student will be able to list the indications, contra indications, dosages of electro therapy modalities, demonstrates the different techniques, and describe their effects on various conditions.

Course Content:

Topic and Contents	Hours	Marks
UNIT-1: Therapeutic electricity	8	10
• Basic types of current – AC & DC • Types of Current used in Therapeutics Modified D.C		
UNIT-2: Low frequency currents	12	15
• Faradic Current: Definition, Modifications,Techniques of Application of Individual, Muscle and Group Muscle stimulation, Physiological & Therapeutic effects of Faradic Current,Precautions, Indications & Contra-Indications, Dangers. • Ionization / Iontophoresis : Techniques of Application of Iontophoresis, Indications, Selection • of Current, Commonly used Ions (Drugs) for pain, hyperhydrosis, would healing.		

• HVPGS,Diadynamic & sinusoidal current •		
UNIT- 3 GALVANIC CURRENT	8	15
• Galvanic Current: Definition, Modifications, Physiological & Therapeutic effects of Galvanic Current, Indications & Contra-Indications, Dangers, Effect of interrupted galvanic current on normally innervated and denervated muscles and partially denervated muscles.		
UNIT- 4 ELECTROTHERAPY PRINCIPLES	5	10
• Principles of Application: Electrode tissue interface, Tissue Impedance, Types of Electrode, • Size & Placement of Electrode – Waterbath, Unipolar, Bi-polar, Electrode coupling, Current flow in tissues, Lowering of Skin Resistance.		
UNIT-5 TENS	3	10
• TENS: Define TENS, Types of TENS, Conventional TENS, Acupuncture TENS, Burst TENS,Brief & Intense TENS, Modulated TENS. Types of Electrodes & Placement of Electrodes,Dosage parameters, Physiological & Therapeutic effects, Indications & Contraindications. • Pain: Define Pain, Pain Gate Control theory in detail.		
TOTAL	**36**	**60**

Course Title: Human Anatomy-II(Lab)		Course Code: BP152	
Semester	: **I**	Core / Elective: **Program Core**	
Teaching Scheme in Hrs (L:T:P)	: 0**:0:2**	Credits	: 2
Type of course: Practical		Total Contact Hours	: 24 hrs
Continuous Internal Evaluation	: **60 Marks**	ESE	: **40 Marks**

PRACTICAL

S.No.	Name Of Topic	Marks
1	PELVIC BONE	2
2	FEMUR , TIBI, FIBULA	2
3	TARSALS & FOOT	2

4	MUSCLES AROUND HIP JOINT	**2**
5	MUSCLES AROUND KNEE JOINT	**2**
6	MUSCLES AROUND ANKLE & FOOT	**2**
7	NERVES- SCIATIC, FEMORAL	**2**
8	STRUCTURE OF VERTEBRAE	**2**
9	ABDOMINAL MUSCLES (ANT. & POST)	**2**
10	STRUCTURE OF SKULL	**2**
	VIVA	**20**
	TOTAL	**40**

Course Title: Human Physiology-II lab	Course Code: BP 154
Semester : **II**	Core / Elective: **Program Core**
Teaching Scheme in Hrs (L:T:P) : 0**:0:2**	Credits : 2
Type of course: Practicals	Total Contact Hours : 24 hrs
Continuous Internal Evaluation : **60 Marks**	ESE : **40 Marks**

PRACTICAL

S.No.	Name Of Topic	Marks
1	Use of spirometer & correlation with lung volume & capacities	**2**
2	Respiratory auscultation	**2**
3	To check SPO2 level by pulseoxymeter	**2**
4	To use thermometer	**2**
5	Measurement of respiratory rate	**2**
6	Reflex hammer	**2**
7	reflexes	**2**
8	sensory examination	**2**
9	Testing vision by snells & ischiara chart	
10	Testing hearing sense by tuning fork	
	Viva	**20**
	Total	**40**

Course Title: FUNDAMENTALS OF EXERCISE THERAPY - LAB		Course Code: BP114	
Semester	: **II**	Core / Elective: **Program Core**	
Teaching Scheme in Hrs (L:T:P)	: 0**:0:2**	Credits	: 2
Type of course: Practical		Total Contact Hours	: 24 hrs
Continuous Internal Evaluation	: **60 Marks**	ESE	: **40 Marks**

PRACTICAL

S.No.	Name Of Topic	Marks
1	SPOTTER-1 (Shoulder wheel, ladder, pulley, finger exerciser , peg board)	2
2	SPOTTER-2 (quadriceps chair, pedocycle, baps board, CPM, therband , theratube)	2
3	SPOTTER-3 (swiss ball foam roller, medicine ball,trampoline, bosu ball)	2
4	Relaxation technique	2
5	PROM Upper limb	2
6	PROM Lower limb	2
7	PROM spine	2
8	Goniometry	2
9	AROM Basics	2
10	Suspension therapy	2
	VIVA	20
	TOTAL	40

Course Title: FUNDAMENTALS OF ELECTROTHERAPY - LAB		Course Code: BP158	
Semester	: **II**	Core / Elective: **Program Core**	
Teaching Scheme in Hrs (L:T:P)	: 0**:0:2**	Credits	: 2
Type of course: Practical		Total Contact Hours	: 24 hrs
Continuous Internal Evaluation	: **60 Marks**	ESE	: **40 Marks**

PRACTICAL

S.No.	Name Of Topic	Marks
1	SPOTTER-1 (LFC, MFC, HFC)	2
2	SPOTTER-2 (CRYOTHERAPY & THERMOTHERAPY)	2
3	SPOTTER-3 (LASER & TRACTION)	2
4	Testing of Muscle stimulator	2
5	Application faradic current	2

6	Application Faradism under pressure	**2**
7	Application of Galvanic current	**2**
8	Apply stimulation of facial muscles	**2**
9	Testing of TENS	**2**
10	Application of TENS	**2**
	VIVA	**20**
	TOTAL	**40**

Bachelor of Physiotherapy (BPT) 3rd Semester

Course Title: Pharmacology-I	Course Code: BP201
Semester : **III**	Core / Elective: **Program Core**
Teaching Scheme in Hrs (L:T:P) : **3:0:0**	Credits : 3
Type of course: **Lecture + Assignments**	Total Contact Hours : 36 hrs
Continuous Internal Evaluation : **40 Marks**	ESE : **60 Marks**

Course Objectives: This introduces the student to basic pharmacology of common drugs used, their importance in the overall treatment including Physiotherapy. The student will be able to understand the general principles of drug action and the handling of drugs by the body. The student will be aware of the contribution of both drug and physiotherapy factors in the outcome of treatment.

Course Content:

Topic and Contents	Hours	Marks
UNIT-1: General Pharmacology	10	15
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)		
UNIT-2: Drugs Affecting ANS	6	10
General Introduction, Drug affecting parasympathetic nervous system, Drug affecting sympathetic nervous systems		
UNIT-3: Drugs Affecting Peripheral (Somatic) nervous System	6	10
Skeletal Muscle Relaxants,Local Anesthetics.		
UNIT-4: Renal and CVS	8	15

Diuretics; Renin-angiotension system and its inhibitors, Drug treatment of Hypertension, Angina pectoris, Myocardial infarction, Heart failure, and hypercholesterolemia.		
UNIT 5: Anti-inflammatory drugs and related autacoids	6	10
Histamine, Bradykinin, 5-HT and their antagonists; Prostaglandins and leukotrienes; Nonsteroidal-Antiinflammatory drug, Antirheumatic drugs and drugs used in gout		
TOTAL	**36**	**60**

Reference books

1.Lippicott's Pharmacology.
2.Essential of Medical Phramacology by Tripathi
3. Text book of Medical Pharmacology by Padmaja udaykumar
4. Pharmacology by N.Murugesh
5. Pharmacolgy & Pharmacotherapeutics by Sadoskar

Course Title: Pathology & Microbiology	Course Code: BP203
Semester : **III**	Core / Elective: **Program Core**
Teaching Scheme in Hrs (L:T:P) : **4:0:0**	Credits : 4
Type of course: **Lecture + Assignments**	Total Contact Hours : 48 hrs
Continuous Internal Evaluation : **40 Marks**	ESE : **60 Marks**

Course Objectives: The knowledge and understanding of Pathology of diseases is essential to institute appropriate treatment or suggest preventive measures to the patient. Subject involves the study of causes and mechanisms of diseases. Microbiology involves the study of common organisms causing diseases including nosocomial infections and precautionary measures to protect one from acquiring infections.

Course Content:

Topic and Contents	Hours	Marks
UNIT-1: Introduction	8	10
• Brief outline of cell injury, degeneration, necrosis and gangrene. • Inflammation: Definition, vascular and cellular phenomenon, difference between Transudate and exudates, granuloma • Healing and repair. • Introduction and History of Microbiology • General lectures on Microorganisms (brief).		
UNIT-2: Cardio pulmonary system	10	10

• Circulatory disturbances: Hemorrhage, Embolism, Thrombosis, Infraction, shock, Volkmann's ischemic contracture. • Blood disorder: Anemia, Bleeding disorder. • CVS: Heart and Blood vessels, Coronary heart disease. • Chronic Bronchitis, Asthma, Bronchiectasis, Emphysema, COPD.		
UNIT-3: Immunity	12	15
• Natural and Acquired • Allergy and hypersensitivity. • Source of infection and Entry and its Spread • Sterilization and asepsis. • Autoimmune diseases. • Diabetes mellitus and gout.		
UNIT-4: Common Infections	10	15
• Respiratory tract infections. • Meningitis. • Enteric infections. • Anaerobic infections. • Urinary tract infections. • Leprosy & tuberculosis • Wound infections. • Sexually transmitted diseases. • Hospital acquired infections. • Virology- virus infections with special mention of Hepatitis • Poliomyelitis & rabies		
UNIT 5: **Neuro - muscular system**	8	10
• PNS and Muscles: Neuropathies, Poliomyelitis & Myopathies. • CNS: Infection, Demyelinating disease, Degenerative disease. Neoplasia • Bones and Muscles: Arthritis & Spondyloarthropathy • Growth and its disorders, like hypertrophy, hyperplasia & atrophy		
TOTAL	**48**	**60**

Reference books

1. Text book of pathology: Harshmohan
2. General systemic pathology: Churchill Livingstone
3. Text book of Pathology: Robbins
4. Short text book of Medical Microbiology by Sathish Gupta
5. Text book of Microbiology by Jayaram Panicker
6. Microbilogy &Parasitiology by Rajeshwar Reddy
7. Text book of Microbiology by Anantha Narayanan
8. Microbiology by Baveja

Course Title: Exercise Therapy-I	Course Code: BP211
Semester : **III**	Core / Elective: **Program Core**
Teaching Scheme in Hrs (L:T:P) : **3:0:0**	Credits : 3
Type of course: **Lecture + Assignments**	Total Contact Hours : 36 hrs
Continuous Internal Evaluation : **40 Marks**	ESE : **60 Marks**

Course Objectives: Subject teaches principles and effects of exercise as a therapeutic modality and will learn the techniques in the restoration of physical functions.

Course Content:

Topic and Contents	Hours	Marks
UNIT-1: Manual Therapies • Biomechanical basis for mobilization, • Effects of joint mobilsation, Indications and contraindiactions, • Grades of mobilization, Principles of mobilization, Techniques of mobilization for upper limb, lower limb, Precautions. • Massage- History and Classification of Massage Technique	8	15
UNIT-2: Manual Muscle Testing: Introduction to MMT, Principles & Aims, Indications & Limitations, Techniques of MMT for group & individual muscles : Techniques of MMT for upper limb / Techniques of MMT for lower limb / Techniques of MMT for spine •	8	15
UNIT-3: Functional Re-education • Lying to sitting: Activities on the Mat/Bed, Movement and stability at floor level; Sitting activities and gait; Lowerlimb and Upperlimb activities. • Balance & coordination- Definition ,Physiology of balance: contributions of sensory systems, processing sensory information, generating motor output • Components of balance (sensory, musculoskeletal, biomechanical) • Causes of impaired balance, Examination & evaluation of impaired balance, Activities for treating impaired balance: mode, posture, movement, Precautions & contraindications, Types • Types of resisted exercises: Manual and Mechanical resistance exercise, Isometric exercise,	8	10

• Dynamic exercise: Concentric and Eccentric, Dynamic exercise: Constant versus variable resistance, Isokinetic exercise, Open-Chain and Closed-Chain exercise. • Specific exercise regimens Isotonic: de Lormes, Oxford, MacQueen, Circiut weight training Isometric: BRIME (Brief Resisted Isometric Exercise), Multiple Angle Isometrics Isokinetic regimens Causes of immobility, Classification of Passive movements, Specific definitions related to passive movements, Principles of giving passive movements, Indications, contraindications, effects of uses , Techniques of giving passive movements. Proprioceptive Neuromuscular Facilitation		
UNIT-4: Aerobic Exercise • Definition and key terms; Physiological response to aerobic exercise, Examination and evaluation of aerobic capacity – Exercise Testing, Determinants of an Exercise Program, The Exercise Program, Normal and abnormal response to acute aerobic exercise, • Physiological changes that occur with training, Application of Principles of an Aerobic conditioning program for patients – types and phases of aerobic training.- deconditioning , for aged, for cardiac patients. •	6	10
UNIT 5: Walking Aids • Types: Crutches, Canes, Frames	6	10
TOTAL	**36**	**60**

Reference books

1. Therapeutic exercise by Barbara Bandy
2. Therapeutic exercise by Carolyn Kisner
3. Principles of exercise therapy by M.Dena Gardiner
4. Practical Exercise therapy by Hollis Margaret
5. Therapeutic exercise by Sydney Litch
6. Therapeutic exercise by Hall & Brody
7. Therapeutic exercise by Basmajjian
8. Physical Rehabilitation by o'Sullivan.

Course Title: ELECTROTHERAPY -I	Course Code: BP213
Semester : **III**	Core / Elective: **Program Core**

Teaching Scheme in Hrs (L:T:P)	: **3:0:0**	Credits	: 3
Type of course: **Lecture + Assignments**		Total Contact Hours	: 36 hrs
Continuous Internal Evaluation	: **40 Marks**	ESE	: **60 Marks**

Course Objectives: In this course the student will learn the Principles, Techniques, Effects, Indication, Contra-Indication. and the dosage parameter for various indications of electro therapeutic modalities in the restoration of physical function. The objective of this course is that after lectures, demonstration, practical and clinics the student will be able to list the indications, contra indications, dosages of electro therapy modalities, demonstrates the different techniques, and describe their effects on various conditions

Course Content:

Topic and Contents	Hours	Marks
UNIT-1: Medium Frequency currents	8	10
• Interferential Therapy: Define IFT, Principle of Production of IFT, Static Interference System,Dynamic Interference system, Dosage Parameters for IFT, Electrode placement in IFT,Physiological & Therapeutic effects, Indications & Contraindications. • Russian Current • Rebox type Current		
UNIT-2 **Infra Red Radiations**	8	15
• Define IRR,wavelength & parameters, Types of IR generators, Production of IR,Physiological & Therapeutic effects, Duration & frequency of treatment, Indication &Contraindication		
UNIT-3: Thermotherapy	8	15
• Wax Therapy: Principle of Wax Therapy application – latent Heat, Composition of Wax Bath Therapy unit, Methods of application of Wax, Physiological & Therapeutic effects, Indications & Contraindication, Dangers. • Contrast Bath: Methods of application, Therapeutic uses, Indications & Contraindications. • Moist Heat Therapy: Hydro collator packs – in brief, Methods of applications, Therapeutic uses, Indications & Contraindications • Cyclotherm: Principles of production, Therapeutic uses, Indications & Contraindications. • Fluidotherapy: Construction, Method of application, Therapeutic uses, Indications & Contraindications. • Whirl Pool Bath: Construction, Method of Application, Therapeutic Uses, Indications & Contraindications.		

UNIT-4: Cryotherapy	6	10
• Define- Cryotherapy, Principle- Latent heat of fusion, Physiological & Therapeutics effects, Techniques of Applications, Indications & Contraindications, Dangers, Methods of application with dosages		
UNIT-5 UVR	6	10
• Define UVR, Types of UVR, UVR generators: High pressure mercury vapour lamp,Water cooled mercury vapour lamp, Kromayer lamp, Fluorescent tube, Theraktin tunnel,PUVA apparatus. Physiological & Therapeutic effects. Sensitizers & Filters. Test dosage calculation. Calculation of E1, E2, E3, E4 doses. Indications, contraindications. Dangers.Dosages for different therapeutic effects, Distance in UVR lamp		
TOTAL	**36**	**60**

Reference books

1. Claytons Electrotherapy by Forster & Plastangs
2. Electrotherapy Explained by Low & Reed
3. Clinical Electrotherapy by Nelson
4. Electrotherapy Evidene based practice by Sheila Kitchen
5. Physical agents by Michile Cameroon
6. Principles of Electrotherapy by Michile Camreeon

Course Title: Biomechanics & kinesiology -I	Course Code: BP215
Semester : **III**	Core / Elective: **Program Core**
Teaching Scheme in Hrs (L:T:P) : **3:0:0**	Credits : 3
Type of course: **Lecture + Assignments**	Total Contact Hours : 36 hrs
Continuous Internal Evaluation : **40 Marks**	ESE : **60 Marks**

Course Objectives: Biomechanics involves the study of basic concepts of human movement, and application of various biomechanical principles in the evaluation and treatment of disorders of musculoskeletal system .Students are taught to understand the various quantitative methods of movement. Mechanical principles of various treatment methods are studied. Study of posture and gait are also included

Course Content:

Topic and Contents	Hours	Marks
UNIT-1: Essential Concepts	8	10
• Motion and forces, Axis and planes, Mechanical lever, lever in Human body.		

• Force distribution-linear force, resultant force & equilibrium, parallel forces in one plane concurrent force. • Newton's law – Gravity and its effects on human body • Forces and moments in action • Concepts of static equilibrium and dynamic equilibrium • Composition and resolution of forces • Friction • Pulleys.		
UNIT-2: Joint and Muscle Structure with Functions- • Basic Principles of joint structure and function. • Tissues present in and around joints including fibrous tissue, bone cartilage, connective tissue, ligaments, tendons etc. Classification of joints • Mobility and Stability functions of muscle • Elements of muscle structures and its properties. • Types of muscle contraction and muscle work. • Classification of muscles and their functions • Group action of muscles, coordinated movement.	8	10
UNIT-3: Kinematics And Kinetics Concepts of Scapulo - shoulder Joint • Anatomy • Osteokinematics • Arthrokinematics	8	15
UNIT-4: Kinematics And Kinetics Concepts of Elbow Joint • Anatomy • Osteokinematics • Arthrokinematics	6	15
UNIT 5: Kinematics And Kinetics Concepts of Wrist Joint & Hand. • Anatomy • Osteokinematics Arthrokinematics	6	10
TOTAL	**36**	**60**

ReFerence Books

1. Joint Structure & Function – Cynthia Norkins
2. Biomechanics Principle- Donald Neumann

Course Title: Introduction to Yoga	Course Code:

Semester	: **III**	Core / Elective: **Program Core**	
Teaching Scheme in Hrs (L:T:P)	: **2:0:0**	Credits	: 2 **Credits**
Type of course: **Lecture + Assignments**		Total Contact Hours	: 24
Continuous Internal Evaluation	: **40 Marks**	ESE	: **60 Marks**

Course Objectives:

1 . To acquire knowledge about the yoga and its effect on human body.

Course Content:

Topic and Contents	Hours	Marks
UNIT-1General Introduction to Yoga Brief about origin of Yoga- Psychological aspects and Mythological concepts, History and development of Yoga, Prior to the Vedic period, Medival period, Modern era. Definition of Yoga, Aim and Objectives of Yoga, Misconceptions of Yoga, Brief about Streams of Yoga; Principles of Yoga, Importance of Yoga. Hastra Mudra: Chin Jnana, Hridaya, Yoni, Sankha, Adi and Brahma	6	10
UNIT-2: Philosophy: meaning, definitions and scope, Indian Philosophy: Salient features, Branches (Astika and Nastika Darshanas), Distintion fromReligion and Science, Brief introduction to Prasthanatrayee and Purushartha Chatushtaya; Relationshio between Yoga and Indian Philosophy. Shatkarmas: Dhauti, Neti, Kapalbhati and its variants.	6	15
UNIT-3: Brief to Upanishods and Yoga in principal Upanishads, Yoga in Yogaupanishd; Yogic perspective of Epics; Ramayana, Adhyatma Ramayana and Mahabharata, Yogic Perspective Bhagavad Gita, Yoga Vasistha , Narada Bhakti Sutras.	6	15
UNIT-4: **Introduction about vedas** **Yogic perspective:** smritis, puranas with emphasis to bhagavat purana; Yogic perspective to shad-darshanas; emphasis to vedantic approach of	3	10

Shankara, Ramanuja, Madhva and Vallabha; Brief: Tantras, Shaiva Siddhanta.		
UNIT 5: **Types of Yoga** **Janana yoga** **Karma yoga** **Bhakti yoga** **Raja yoga**	3	10
TOTAL	**24**	**60**

Reference:

1.Agarwal M M : Six System of Indian Philosophy, Chowkhanbha Vidya Bhawan, Varanai,2010

2. Hiryanna M : Outlines of Indian Philosophy, Motilal Banarsidas, Delhi, 2009

3. Hiryanna M : Essentials of Indian Philosophy, Motilal Banarsidas, Delhi, 2008

Course Title:	EXERCISE THERAPY-I LAB	Course Code:	BP255
Semester	: **III**	Core / Elective:	**Program Core**
Teaching Scheme in Hrs (L:T:P)	: 0**:0:2**	Credits	: 2
Type of course: Practicals		Total Contact Hours	: 24 hrs
Continuous Internal Evaluation	: **60 Marks**	ESE	: **40 Marks**

PRACTICAL

S.No.	Name Of Topic	Marks
1	Resisted ROM of UL	2
2	Resisted ROM of LL	2
3	Walking Aids	2
4	Massage	2
5	Facial massage	2
6	MMT of UL	2
7	MMT of LL	2
8	Limb length measurement	2
9	Mobilisation UL	2
10	Mobilisation of LL	2
	Viva	20
	TOTAL	40

Course Title: ELECTRO THERAPY -I LAB		Course Code: BP257	
Semester	: **III**	Core / Elective: **Program Core**	
Teaching Scheme in Hrs (L:T:P)	: **0:0:2**	Credits	: 2
Type of course: Practicals		Total Contact Hours	: 24 hrs
Continuous Internal Evaluation	: **60 Marks**	ESE	: **40 Marks**

PRACTICAL

S.No.	Name Of Topic	Marks
1	Testing of IFT	2
2	Application of IFT	2
3	Application of russian current	2
4	Application of hydrocollatoer unit	2
5	Application of cryotherapy	2
6	Application of IRR	2
7	Application of PWB	2
8	Application of contrast bath	2
9	Testing of UVR	
10	Application of UVR	
	Viva	20
	TOTAL	40

Bachelor of Physiotherapy (BPT) 4th Semester

Course Title: Pharmacology-II		Course Code: BP202	
Semester	: **IV**	Core / Elective: **Program Core**	
Teaching Scheme in Hrs (L:T:P)	: **3:0:0**	Credits: 3	
Type of course: **Lecture + Assignments**		Total Contact Hours	: 36 hrs
Continuous Internal Evaluation	: **40 Marks**	ESE	: **60 Marks**

Course Objectives: This introduces the student to basic pharmacology of common drugs used, their importance in the overall treatment including Physiotherapy. The student will be able to understand the general principles of drug action and the handling of drugs by the body. The student will be aware of the contribution of both drug and physiotherapy factors in the outcome of treatment.

Course Content:

Topic and Contents	Hours	Marks
UNIT-1: Drugs Affecting CNS	12	15
General anesthetics, Anxiolytics and hynotics; Alcohol, Opioid analgesics, Drug dependence and abuse, Antiepileptic drugs, Drug therapy for Neurodegenerative disorders		
UNIT-2: Endocrine system	6	15
Parathyroid hormone, Vitamin D, Calcitonin and drugs affecting Calcium balance, Thyroid and antithyroid drugs; Adrenocortical and anabolic steroids, Insulins and Oral Hypoglycaemic agents, Oral contraceptives		
UNIT-3: Drugs Affecting Respiratory System	6	10
Drug therapy of bronchial asthma and chronic obstructive pulmonary disease		
UNIT-4: Chemotherapy	6	10
Introduction; sulfonamides, Fluoroquinolones, Penicillins, Cephalosporins, Newer B-lactam antibiotic, Aminoglycosides, Macrolides and Newer antibiotics, Tetracyclines, Chloramphenicol		
UNIT 5: Disease specific	6	10
Chemotherapy of Tuberculosis and Leprosy, Antiseptics-Disinfectants.		
TOTAL	**36**	**60**

Reference books

1.Lippicott's Pharmacology.
2.Essential of Medical Phramacology by Tripathi
3. Text book of Medical Pharmacology by Padmaja udaykumar
4. Pharmacology by N.Murugesh

5. Pharmacolgy & Pharmacotherapeutics by Sadoskar

Course Title: Community Medicine	Course Code: BP204
Semester : **IV**	Core / Elective: **Program Core**
Teaching Scheme in Hrs (L:T:P) :3 **:0:0**	Credits: 3
Type of course: **Lecture + Assignments**	Total Contact Hours : 36 hrs
Continuous Internal Evaluation : **40 Marks**	ESE : **60 Marks**

Course Objectives:. This subject follows the basic science subjects to provide the knowledge about conditions the therapist would encounter in their practice in the community. The objective of this course is that the student will be able to demonstrate an understanding of various aspects of health and disease list the methods of health administration, health education and disease preventive measures.

Course Content:

Topic and Contents	Hours	Marks
UNIT-1: Introduction & general health concepts	8	15
• Introduction to community health. 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		
UNIT-2: Public health administration	8	15
an overview of the health administration set up at Central and state levels.		
UNIT-3: national health programmes	8	10
• the role of social, economic and cultural factors in the implementation of the national programme Family planning – objectives of national family planning programmes and family methods. A general idea of advantage and disadvantages of the methods		
UNIT-4: Health problems of vulnerable groups	6	10
• pregnant and lactating women • infants and pre-school children • Occupational Health-definition, scope, occupational disease prevention of occupational disease and hazards • elderly groups		

• Mental health emphasis on community aspects of mental diseases, role of physiotherapy in mental health problems such as mental retardation. • overall view of communicable disease classified according to principle mode of transmission, role of insect and other factors		
UNIT 5: Social security	6	10
Social security and other measurement for the protection from occupational hazard accident and diseases. Details of compensation acts		
TOTAL	**36**	**60**

Reference books-

- Textbook of Preventive & Social Medicine, Dr. J E Park

Course Title: EXERCISE THERAPY-II	Course Code: BP210
Semester : **IV**	Core / Elective: **Program Core**
Teaching Scheme in Hrs (L:T:P) :3**:0:0**	Credits: 3
Type of course: **Lecture + Assignments**	Total Contact Hours : 36 hrs
Continuous Internal Evaluation : **40 Marks**	ESE : **60 Marks**

Course Objectives:. This subject follows the basic science subjects to provide the knowledge about conditions the therapist would encounter in their practice in the community. The objective of this course is that the student will be able to demonstrate an understanding of various aspects of health and disease list the methods of health administration, health education and disease preventive measures.

Course Content:

Topic and Contents	Hours	Marks
UNIT-1 STRETCHING	8	15
• Stretching- Definition of terms related to stretching; Tissue response towards immobilization and elongation, • Determinants of stretching exercise, Effects of stretching, Inhibition and relaxation procedures		
UNIT-2 CHEST PHYSIOTHERAPY	8	15
Breathing exercises Postural drainage		
UNIT-3 COORDINATION & INCOORDINATION	8	10
• Balance retraining • Anatomy & Physiology of cerebellum with its pathways		

• Definitions: Co-ordination, Inco-ordination • Causes for Inco-ordination, Test for co-ordination: equilibrium test, non equilibrium test • Principles of co-ordination exercise • Frenkel's Exercise: uses of Frenkel's exercise, technique of Frenkel's exercise, progression, home exercise. • Suspension Therapy		
UNIT-4 PNF	6	10
• Principles , patterns with techniques		
UNIT-5 GAIT	6	10
GAIT patterns & abnormalities		
TOTAL	**36**	**60**

Course Title: ELECTRO THERAPY-II	Course Code:- BP212
Semester : **IV**	Core / Elective: **Program Core**
Teaching Scheme in Hrs (L:T:P) :3**:0:0**	Credits: 3
Type of course: **Lecture + Assignments**	Total Contact Hours : 36 hrs
Continuous Internal Evaluation : **40 Marks**	ESE : **60 Marks**

Course Objectives:. This subject follows the basic science subjects to provide the knowledge about conditions the therapist would encounter in their practice in the community. The objective of this course is that the student will be able to demonstrate an understanding of various aspects of health and disease list the methods of health administration, health education and disease preventive measures.

Course Content:

Topic and Contents	Hours	Marks
UNIT-1 TRACTION	8	15
Cervical & lumbar traction		
UNIT- 2 ELECTRODIAGNOSIS	8	15
• FG Test • SD Curve: Methods of Plotting SD Curve, Apparatus selection, Characters of Normally innervated Muscle, Characters of Partially Denervated Muscle, Characters of Completely denervated Muscle, Chronaxie & Rheobase. • Nerve conduction velocity studies • EMG: Construction of EMG equipment. Bio-feed back.		

UNIT-3 LASER	8	10
Define LASER. Types of LASER. Principles of Production. Production of LASER by various methods. Methods of application of LASER. Dosage of LASER. Physiological & Therapeutic effects of LASER. Safety precautions of LASER. Classifications of LASER.Energy density & power density		
UNIT-4 HIGH FREQUENCY CURRENTS	6	10
• SWD: Define short wave, Frequency & Wavelength of SWD, Principle of Production of SWD, Circuit diagram & Production of SWD, Methods of Heat Production by SWD treatment, Types of SWD Electrode, Placement & Spacing of Electrodes, Tuning, Testing of SWD Apparatus, Physiological & Therapeutic effects, Indications & Contraindications, Dangers, Dosage parameters • Pulsed Electro Magnetic Energy: Principles, Production & Parameters of PEME, Uses of PEME. • Micro Wave Diathermy: Define Microwave, Wave length & Frequency, Production of MW, Applicators, Dosage Parameters, Physiological & Therapeutic effects, Indications & Contraindications, Dangers of MWD. •		
UNIT-5 ULTRASOUND	6	10
• Ultrasound: Define Ultrasound, Frequency, Piezo Electric effects: Direct, Reverse, Production of US, Treatment Dosage parameters: Continous & Pulsed mode, Intensity, US Fields: Near field, Far field, Half value distance, Attenuation, Coupling Media, Thermal effects, Nonthermal effects, Principles & Application of US: Direct contact, Water bag, Water bath, Solid sterile gel pack method for wound. Uses of US, Indications & Contraindications, Dangers of Ultrasound. Phonophoresis: Define Phonophoresis, Methods of application, Commonly used drugs, Uses. Dosages of US.		
TOTAL	**36**	**60**

Course Title: Biomechanics & kinesiology- II	Course Code: BP209
Semester : **III**	Core / Elective: **Program Core**
Teaching Scheme in Hrs (L:T:P) : **3:0:0**	Credits : 3
Type of course: **Lecture + Assignments**	Total Contact Hours : 36 hrs
Continuous Internal Evaluation : **40 Marks**	ESE : **60 Marks**

Course Objectives: Biomechanics involves the study of basic concepts of human movement, and application of various biomechanical principles in the evaluation and treatment of disorders of musculoskeletal system .Students are taught to understand the various quantitative methods of movement. Mechanical principles of various treatment methods are studied. Study of posture and gait are also included

Course Content:

Topic and Contents	Hours	Marks
UNIT-1: Kinematics And Kinetics Concepts of Lower extremity Structure and functions of lower extremity joints • hip joint, • knee joint • ankle • foot complex	8	15
UNIT-2: Kinematics And Kinetics Concepts of Spine Structure and functions of axial skeletal joints – vertebral column – craniocervical • Thorax • Lumbar • lumbo pelvic region	8	15
UNIT-3: Kinematics And Kinetics Concepts of TMJ Structure and functions of tempromandibular joint	8	10
UNIT-4: Posture • Dynamic and static posture, kinetic and kinematics of posture, analysis of posture, effect of age, pregnancy, occupation on posture	6	10
UNIT 5: Gait Kinematics and kinetics of gait, gait in running and stair climbing.	6	10
TOTAL	**36**	**60**

ReFerence Books

3. Joint Structure & Function – Cynthia Norkins
4. Biomechanics Principle- Donald Neumann

Course Title: EXERCISETHERAPY-II LAB	Course Code: BP256
Semester : **IV**	Core / Elective: **Program Core**
Teaching Scheme in Hrs (L:T:P) : **0:0:2**	Credits : 2
Type of course: Practicals	Total Contact Hours : 24 hrs
Continuous Internal Evaluation : **60 Marks**	ESE : **40 Marks**

5.

6. PRACTICAL

7.

S.No.	Name Of Topic	Marks
1	STRETCHING UL	2
2	STRETCHING LL	2
3	BREATHING EXERCISES	2
4	POSTURAL DRAINAGE	2
5	AEROBIC EXERCISES	2
6	FRENKLES EXERCISES	2
7	CIRCUIT TRAINING	2
8	POSTURE ASSESMENT	2
9	PNF	2
10	GAIT TRAINING	2
	Viva	20
	TOTAL	40

8.

Course Title: ELECTROTHERAPY -II LAB		Course Code: BP258	
Semester	: **IV**	Core / Elective: **Program Core**	
Teaching Scheme in Hrs (L:T:P)	: **0:0:2**	Credits	: 2
Type of course: Practicals		Total Contact Hours	: 24 hrs
Continuous Internal Evaluation	: **60 Marks**	ESE	: **40 Marks**

PRACTICAL

S.No.	Name Of Topic	Marks
1	CERVICAL TRACTION	2
2	LUMBAR TRACTION	2
3	Testing of US	2
4	Application of US	2
5	Testing of SWD	2
6	APPLICATION OF SWD	2
7	LASER machine	2
8	Application of LASER	2
9	S-D CURVE	2
10	PHONOPHORESIS	2
	Viva	20
	TOTAL	40

Bachelor of Physiotherapy (BPT) 5th semester

Course Title: Community based rehabilitation (CBR)	Course Code: BP301
Semester : **V**	Core / Elective: **Program Core**
Teaching Scheme in Hrs (L:T:P) : 3:0:0	Credits: : 3
Type of course: **Lecture + Assignments**	Total Contact Hours : 36 hrs
Continuous Internal Evaluation : **40 Marks**	ESE : **60 Marks**

Course Objectives: The subject serves to integrate the knowledge gained by the students in community medicine and other areas with skills to apply these in clinical situations of health and disease and its prevention. The objective of the course is that after the specified hours of lectures and demonstrations the student will be able to identify rehabilitation methods to prevent disabilities and dysfunctions due to various disease conditions and plan and set treatment goals and apply the skills gained in rehabilitating and restoring functions.

Course Content:

Topic and Contents	Hours	Marks
UNIT-1: General Principles • Introduction to CBR • Role of various agencies in CBR • Rehab Team • Sociolegal aspects	8	15
UNIT-2: Disability • Introduction to disability , impairment, handicap • Prosthesis • Orthosis • Mobility aids	8	15
UNIT-3: Therapeutic management • Therapeutic exercises & techniques • Physical agents in rehabilitation • Gait analysis and training	8	10
UNIT-4: Environmental & social support in rehabilitation • Vocational training in rehabilitation • Architectural barriers • ADL	6	10
UNIT 5: Management of special population • Geriatric rehab. • Ergonomics • Management of communication impairment & behavioural problems	6	10
TOTAL	**36**	**60**

Reference books-

- *Rehabilitation Medicine by Howard A Rusk.*

- *Rehabilitation Medicine by Joel A De lisa*

Course Title: Clinical Orthopaedics & Traumatology-I	Course Code: BP 307
Semester : V	Core / Elective: **Program Core**
Teaching Scheme in Hrs (L:T:P) 3 **:0:0**	Credits: 3
Type of course: **Lecture + Assignments**	Total Contact Hours : 36 hrs
Continuous Internal Evaluation : **40 Marks**	ESE : **60 Marks**

Course Objectives: The subjects provide the knowledge about Orthopedic conditions the therapist would encounter in their practice. The objective of this course is that the student will be able to demonstrate and understand orthopedic conditions causing disability, list the aetiology, clinical features and methods of investigations and medical management

Course Content:

Topic and Contents	Hours	Marks
UNIT-1: TRAUMA 1) Introduction 2) Anatomy of bone & fracture healing 3) Treatment of fracture 4) Splints & traction 5) Recent advances in treatment of fracture	8	15
UNIT-2: APPROACH TO PATIENT 1) Approach to a patient with limb injury 2) Complications of fracture 3) Injury to joints- dislocations & subluxation 4) Fracture in children 5) PNI	8	15
UNIT-3: DEFORMITIES 1) Deformities & their management 2) Treatment of orthopaedic disorders	8	10
UNIT-4: INJURIES OF UL 1) Injuries around shoulder 2) Injuries around elbow 3) Injuries in forearm & wrist 4) Hand injuries	6	10
UNIT 5: INJURIES OF LL 1) Pelvic fractures	6	10

2) Injuries around hip 3) Fracture of shaft femur 4) Injuries around knee 5) Injuries to leg, ankle & foot		
TOTAL	**36**	**60**

Reference books
Outline of Fractures—John Crawford Adams.
Outline of Orthopedics.— John Crawford Adams.
Text book of Orthopedics.—Maheswari.
Apley's Orthopedics.
Textbook of Orthopedics and Traumatology— M.N.Natarajan

Course Title: Clinical Neurology & Neurosurgery-I	Course Code: BP 309
Semester : V	Core / Elective: **Program Core**
Teaching Scheme in Hrs (L:T:P) : **3:0:0**	Credits: 3
Type of course: **Lecture + Assignments**	Total Contact Hours : 36 hrs
Continuous Internal Evaluation : **40 Marks**	ESE : **60 Marks**

Course Objectives:
This subject follows the basic science subjects to provide the knowledge about relevant aspects of neurology & neurosurgery. The student will have a general understanding of the diseases the therapist would encounter in their practice. The objective of this course is that the student will be able to list the etiology, pathology, clinical features and treatment methods for various neurological conditions

Course Content:

Topic and Contents	Hours	Marks
UNIT-1: General introduction & Neurological assessment	8	15
• Neuro anatomy • Neuro physiology • Classification of neurological involvement depending on level of lesion. • Neuro anatomy • Neuro physiology • Classification of neurological involvement depending on level of lesion. • Principles of clinical diagnosis, higher mental function, assessment of brain & spinal cord function, evaluation of cranial nerves and evaluation of autonomic nervous system. • Principles, methods, views, normal/abnormal values/features, types of following investigative procedures- skull x-ray, CT, MRI, evoked potentials, lumbar puncture,CSF examination, EMG, NCV. • Assessment of visual function – acuity, field, colour vision, Pupillary reflex,		

accommodation reflex, abnormalities of optic disc, disorders of optic nerve, tract, radiation, occipital pole, disorders of higher visual processing, disorders of pupil, disorders of eye movements, central disorders of eye movement. • Deafness, vertigo, and imbalance: Physiology of hearing, disorders of hearing, examination & investigations of hearing, tests of vestibular function, vertigo, peripheral vestibular disorders,central vestibular vertigo		
UNIT-2: Lower cranial nerve paralysis	8	15
Etiology, clinical features, investigations, and management of following disorders - lesions in trigeminal nerve, trigeminal neuralgia, trigeminal sensory neuropathy, lesions in facial nerve, facial palsy, bell's palsy, hemi facial spasm, Glosso pharangeal neuralgia, lesions of Vagus nerve, lesions of spinal accessory nerve, lesions of hypoglossal nerve. Dysphagia – swallowing mechanisms, causes of dysphagia, symptoms,examination, and management of dysphagia		
UNIT-3: Cerebro-vascular diseases	8	10
Define stroke, TIA, RIA, stroke in evolution, multi infarct dementia and Lacunar infarct. Classification of stroke – Ischemic, hemorrhagic, venous infarcts. Risk factors, cause of ischemic stroke, causes of hemorrhagic stroke. Classification of hemorrhagic stroke, classification of stroke based on symptoms, stroke syndrome, investigations, differential diagnosis, medical and surgical management		
UNIT-4: **Brain infections, tumor & trauma**	6	10
➢ Etiology, pathophysilogy, classification, clinical signs & symptoms, investigations, differential diagnosis, medical management, surgical management and complications of following disorders – Meningitis, Encephalitis, Poliomyelitis and Postpolio syndrome. Complications of systemic infections on nervous system – Septic encephalopathy, AIDS, Rheumatic fever, Brucellosis, Tetanus, and Pertussis ➢ TUMORS- Classification, clinical features, investigations, medical and surgical management ➢ HEAD INJURY -Etiology, classification, clinical signs & symptoms, investigations, differential diagnosis, medical management, surgical management and complications		
UNIT 5: Spinal cord disorders	6	10
Functions of tracts, definition, etiology, risk factors, pathophysilogy, classification, clinical signs & symptoms, investigations, differential diagnosis, medical management, surgical management and complications of following disorders – Spinal cord injury, Compression by IVD prolapse, Spinal epidural abscess, Transverse myelitis, Viral myelitis, Syringomyelia, Spina bifida, Sub acute combined degeneration of the cord, Hereditary spastic paraplegia, Radiation myelopathy, Progressive encephalomyelitis, Conus medullaris syndrome, Bladder & bowel dysfunction, and Sarcodosis		

TOTAL	**36**	**60**

Reference books-

- Davidson's Principles and Practice of Medicine
- Textbook of Neurology- Victor Adams
- Brains Clinical Neurology.
- Illustrated Neurology & Neurosurgery
- Brains Diseases of Nervous System

Course Title: Clinical Surgery with Obstetrics & Gynaecology		Course Code: BP311
Semester : **V**		Core / Elective: **Program Core**
Teaching Scheme in Hrs (L:T:P) :3 :0:0	Credits: 3	
Type of course: **Lecture + Assignments**		Total Contact Hours : 36 hrs
Continuous Internal Evaluation : **40 Marks**		ESE : **60 Marks**

Course Objectives: This subject follows the basic science subjects to provide the knowledge about relevant aspects of general surgery. The student will have a general understanding of the surgical conditions the therapist would encounter in their practice. The objective of this course is that after lectures and discussion the student will be able to list the indications for surgery, etiology, clinical features and surgical methods for various conditions.

Course Content:

Topic and Contents	Hours	Marks
UNIT-1: Introduction to surgery	8	10
• Types of anaesthesia and its affects on the patient • Types of Incisons • General Thoracic Procedures, Endoscopy • Drainage systems and tubes used in Surgery • Surgical Infections • Transfusion therapy • Wound healing Cancer – definition, types, clinical manifestations of cancer, Staging of Cancer, surgical procedures involved in the management of cancer. • Abdominal surgeries - Cholecystectomy, Colostomy, Ileostomy, Gastrectomy, Hernias, Appendicectomy Mastectomy, Neprectomy, Prostectomy. • Burn- Definition, Classification, Causes, Prevention, Pathological changes, Complications,Clinical Features and Management. Skin Grafts – Types, Grafting Procedures, Survival of • Skin Graft ; Flaps – Types and uses of Flaps		

UNIT-2: Diseases of the Arteries and Veins	8	10
Definition, Etiology, Clinical features, signs and symptoms, complications, management and treatment of following diseases : Arteriosclerosis, Atherosclerosis, Aneurysm, Buerger's disease, Raynaud's Disease, Thrombophlebitis, Deep Vein Thrombosis, Pulmonary Embolism, Varicose Veins		
UNIT-3: Reproductive anatomy & Pregnancy	8	10
• 1Vulva, vagina, cervix, uterus, fallopian tube, ovaries, ligaments of pelvic viscera, muscles & pelvis. • Diagnosis of pregnancy • Physiology of pregnancy • Antepartum • Intrapartum • Postpartum • Medical conditions in pregnancy • Infection • Twin gestation • Abortion • Fetal death		

•		
UNIT-4: Female health issues	6	10
• Menstruation • Premenstrual syndrome • Infertility • Amenorrohea • Hyperlactemia • Abnormal uterine bleeding • Pelvic pain • STDs • Breast disease • Menopause • Incontinence		
UNIT 5: Contraception & sterilization	6	10

• Contraception- barrier method, hormonal agents, intrauterine device, post coital contraception • Sterilization- vasectomy, bilateral tubal occlusion • Abstinence- continuous abstinence, natural family planning.		
TOTAL	**36**	**60**

Reference books-

1. *General Surgical Operations – by Kirk / Williamson*
2. *Surgery by Nan*
3. *Bailey and Love's – Short Practice of Surgery*
4. *Chest Disease by Crofton and Douglas.*
5. *Patrica A Downie, Text book of Heart, Chest Vascular Disease for physiotherapists, JP Bros.*

6. Obstetrics & gynecology by D.C. Dutta & gynecology clerkship, Mathew S.Kaufman
7 First aid for the obstetrics
8 General Surgical Operations – by Kirk / Williamson

Course Title: Clinical Orthopaedics & Traumatology -I (Lab)	Course Code: BP355
Semester : **V**	Core / Elective: **Program Core**
Teaching Scheme in Hrs (L:T:P) :0**:0:2**	Credits : 2
Type of course: **Lecture + Assignments**	Total Contact Hours : 24 hrs
Continuous Internal Evaluation : **60 Marks**	ESE : **40 Marks**

PRACTICAL

S.No.	Name Of Topic	Marks
1	Assessment of CTEV	2
2	Assessment of CDH	2
3	Assessment of Poliomyelitis	2
4	Assessment of back for back pain	2
5	Assessment of spine for spinal deformities	2
6	Assessment of amputation	2
7	Assessment of patient with TKR	2
8	Assessment of patient with THR	2
9	Assessment of traumatic paraplegia	2

10	Case study & presentation	**2**
	Viva	**20**
	TOTAL	**40**

Course Title: Clinical Neurology & Neurosurgery -I (Lab)	Course Code: BP357
Semester : **V**	Core / Elective: **Program Core**
Teaching Scheme in Hrs (L:T:P) :0**:0:2**	Credits : 2
Type of course: **Lecture + Assignments**	Total Contact Hours : 24 hrs
Continuous Internal Evaluation : **60 Marks**	ESE : **40 Marks**

PRACTICAL

S.No.	Name Of Topic	Marks
1	Gross motor examination	**2**
2	Fine motor examination	**2**
3	Oromotor examination	**2**
4	spinal reflexes examination	**2**
5	Brainstem reflexes examination	**2**
6	Mid brain reflexes	**2**
7	Cortical reflexes	**2**
8	Motor milestone examination	**2**
9	Automatic reflexes	**2**
10	Case study	**2**
	Viva	**20**
	TOTAL	**40**

Bachelor of Physiotherapy (BPT) 6th Semester

Course Title: Clinical Cardiothoracic & Respiratory Conditions	Course Code: BP304
Semester : **VI**	Core / Elective: **Program Core**
Teaching Scheme in Hrs (L:T:P) 3 :0:0	Credits: 3
Type of course: **Lecture + Assignments**	Total Contact Hours : 36 hrs
Continuous Internal Evaluation : **40 Marks**	ESE : **60 Marks**

Course Objectives: This subject follows the basic science subjects to provide the knowledge about relevant aspects of Cardiothoracic surgery. The student will have a general understanding of the surgical conditions the therapist would encounter in their practice. The objective of this course is that after lectures and discussion the student will be able to list the indications for surgery for cardiac conditions & respiratory conditions , etiology, clinical features and surgical methods for various conditions.

Course Content:

Topic and Contents	Hours	Marks
UNIT-1: Disorders of the Chest Wall	8	15
. Definition, Clinical features, diagnosis and choice of management for the following disorders – chest wall deformities, chest wall tumors		
UNIT-2: Disorders of the Lung	8	15
Definition, Clinical features, diagnosis and choice of management for the following disorders –Spontaneous Pneumothorax, Pleural Effusion, Empyema Thoracis, Lung abscess, Bronchiectasis, Tuberculosis, Bronchogenic Carcinoma, Bronchial Adenomas, Metastatic tumors of the Lung, tracheal Stenosis, Congenital tracheomalacia, Neoplasms of the trachea,		
UNIT-3: Disorders of the Chest Mediastinum	8	10
• Lesions of the Mediastinum. Carcinoma of the female breast		
UNIT-4: Disorders of the Heart	6	10
Definition, Clinical features, diagnosis and choice of management for the following disorders : Congenital Heart diseases – Acyanotic congenital heart disease & Cyanotic congenital heart disease : Patent Ductus Arteriosus, Coarctation of Aorta, Atrial Septal Defect, Ventricular Septal Defect, Tetraology of Fallot, Acquired Heart Disease – Mitral Stenosis & Insufficiency, Aortic Stenosis • Insufficeiency, Ischemic Heart Disease – Coronary Artery Disease, Cardiac tumors		
UNIT 5: Thoracic surgeries	6	10
Thoracotomy – Definition, Types of Incisions with emphasis to the site of insision, muscles cut and complications. Lung surgeries : Pnumonectomy, Lobectomy, segmentectomy – Indications, Physiological changes and		

Complications ; Thoracoplasty, Pleurectomy, Pleurodesis and Decortication of the Lung. Cardiac surgeries – An overview of the Cardio-Pulmonary Bypass Machine – Extracardiac Operations, Closed Heart surgery, Open Heart surgery. Transplant Surgery – Heart, Lung and Kidney – Indications,		
TOTAL	**36**	**60**

Reference books-

1. General Surgical Operations – by Kirk / Williamson
2. Surgery by Nan
3. Bailey and Love's – Short Practice of Surgery
4. Chest Disease by Crofton and Douglas.
5. Patrica A Downie, Text book of Heart, Chest Vascular Disease for physiotherapists, JP Bros

Course Title: Clinical Medicine & Pediatrics	Course Code: BP306
Semester : **VI**	Core / Elective: **Program Core**
Teaching Scheme in Hrs (L:T:P) :3 :0:0	Credits: 3
Type of course: **Lecture + Assignments**	Total Contact Hours : 36 hrs
Continuous Internal Evaluation : **40 Marks**	ESE : **60 Marks**

Course Objectives: Basic aim is to evaluate & rehabilitation services to children. It is dynamic field of clinical practice that is focused on improving the participationof children, and their traditional role as healthcare clinicians & assume leadership in complementary areas of professional practice. It promote students understanding of their professional roles in paediatric physiotherapy & to promote learning & practice of the fundamental clinical skills necessary to assume these roles.

Course Content:

Topic and Contents	Hours	Marks
UNIT-1: Systemic Disorder	8	15
Endocrine diseases- Diabetes Mellitus,Thyroidism Diseases of the blood- Hemophilia, haemorrhages Diseases of the digestive system- Reflux Oesophagitis, Achlasia Cardia, Carcinoma of Oesophagus, Malabsorption Syndrome. Cardiac conditions- RHD, CHD, ASD, VSD		
UNIT-2: Child & nutrition	8	15

nutritional requirement, malnutrition syndrome, vitamins & mineral deficiencies, Protein – Energy Malnutrition, Obesity,		
UNIT-3: Psychiatric Disorders	8	10
• Classifications, Causes, Clinical manifestations and treatment methods used in Psychiatry		
UNIT-4: Infection in children	6	10
Common infectious diseases in children- tetanus , diphtheria, mycobacterial, measles , chickenpox, gastroenteritis , malaria. • Acute CNS infections		
UNIT 5: Immunization schedule	6	10
Common vaccines & immunization schedule		
TOTAL	**36**	**60**

Reference books-

1. Davidson's Principles and Practice of Medicine
2. Harrison's Internal Medicine
3. Braunwald Text of Cardiology
4. Text Book of Cardiology by Hurst

Course Title: Clinical Orthopaedics & Traumatology II	Course Code: BP308
Semester : **VI**	Core / Elective: **Program Core**
Teaching Scheme in Hrs (L:T:P) :3 :0:0	Credits: 3
Type of course: **Lecture + Assignments**	Total Contact Hours : 36 hrs
Continuous Internal Evaluation : **40 Marks**	ESE : **60 Marks**

Course Objectives: The subjects provide the knowledge about Orthopedic conditions the therapist would encounter in their practice. The objective of this course is that the student will be able to demonstrate and understand orthopedic conditions causing disability, list the aetiology, clinical features and methods of investigations and medical management

Course Content:

Topic and Contents	Hours	Marks
	8	15

UNIT-1: INFECTIONS 1) Infection of bones & joints 2) Tuberculosis of bones & joints **3)** Infection of hand		
UNIT-2: DEFORMITIES 1) CTEV 2) CDH **3)** Poliomyelitis & other neuromuscular disorders	8	15
UNIT-3: BACK PROBLEMS 1) PIVD 2) Approach to a patient with back pain 3) Spinal injuries 4) Traumatic paraplegia 5) Scoliosis & other spinal deformities	8	10
UNIT-4: JOINT DISORDERS 1) Arthritis & related diseases 2) Degenerative disorders 3) Affection of soft tissues 4) Metabolic bone disease 5) Miscellaneous affection of bone **6)** Miscellaneous regional disease	6	10
UNIT 5: SURGICAL APPROACH 1) Amputation, prosthetics & orthotics 2) Arthroscopic surgeries 3) Joint replacement surgery **4)** Bone tumours	6	10
TOTAL	**36**	**60**

Reference books

1. *Outline of Fractures—John Crawford Adams.*
2. *Outline of Orthopedics.— John Crawford Adams.*
3. *Text book of Orthopedics.—Maheswari.*
4. *Apley's Orthopedics.*
5. *Textbook of Orthopedics and Traumatology— M.N.Natarajan*

Course Title: Clinical Neurology & Neurosurgery-II	Course Code: BP310
Semester : **VI**	Core / Elective: **Program Core**
Teaching Scheme in Hrs (L:T:P) :3:0:0	Credits: 3:
Type of course: **Lecture + Assignments**	Total Contact Hours : 36 hrs
Continuous Internal Evaluation : **40 Marks**	ESE : **60 Marks**

Course Objectives: This subject follows the basic science subjects to provide the knowledge about relevant aspects of neurology & neurosurgery. The student will have a general understanding of the diseases the therapist would encounter in their practice. The objective of this course is that the student will be able to list the etiology, pathology, clinical features and treatment methods for various neurological conditions

Course Content:

Topic and Contents	Hours	Marks
UNIT-1: Movement disorders & neurobehavioral disorders	8	15
• Parkinson's disease, Dystonia, Chorea, Ballism, Athedosis, Tics, Myoclonus and Wilson's disease • Congenital ataxia, Friedreich's ataxia, Ataxia talengiectasia, Metabolic ataxia, Hereditary cerebellar ataxia, Tabes dorsalis and Syphilis • Seizers, and Epilepsy • Dyssomnias, Parasomnias, Dementia, Obsessive-compulsive disorders • Neural basis of consciousness, causes & investigations of Coma, criteria for diagnosis of Brain death. • Perceptual disorders and Speech disorders		
UNIT-2: Motor neuron diseases	8	15
• Etiology, pathophysilogy, classification, clinical signs & symptoms, investigations, differential diagnosis, medical management, and complications of following disorders - Amyotrophic lateral sclerosis, Spinal muscular atrophy, Hereditary bulbar palsy, Neuromyotonia and Post-irradiation lumbosacral polyradiculopathy.		
UNIT-3: Neuropathy	8	10
• Multiple sclerosis • Polyneuropathies, Hereditary motor sensory neuropathy, Hereditary sensory and Autonomic neuropathies, Amyloid neuropathy, Acute idiopathic Polyneuropathies. Guillain-Barre syndrome • focal neuropathy, neurotmesis, Axonotmesis, Neuropraxia • RSD, Nerve tumors, Brachial plexus palsy, Thoracic outlet syndrome, Lumbosacral plexus lesions, Phrenic & Intercostals nerve lesions, Median nerve palsy, Ulnar nerve palsy, Radial nerve palsy, Musculocutaneous nerve palsy, Anterior & Posterior interosseous nerve palsy, Axillary nerve palsy, Long thoracic nerve palsy, Suprascapular nerve palsy, Sciatic nerve palsy, Tibial nerve palsy, Common peroneal nerve palsy, Femoral nerve palsy, Obturator nerve palsy, Pudental nerve palsy		
UNIT-4: Disorders of neuromuscular junction	6	10
• Myasthenia gravis, Eaton-Lambert syndrome, and Botulism • Muscular dystrophy, Myotonic dystrophy, myopathy, Non-dystrophic		

myotonia		
UNIT 5: Paediatric	6	10
• Cerebral palsy, Hydrocephalus,Arnold-chiari malformation, Basilar impression, Klippel-Feil syndrome, Achondroplacia, Cerebral malformations, Autism, Dandy walker syndrome and Down's syndrome		
TOTAL	**36**	**60**

Reference books-

1. *Davidson's Principles and Practice of Medicine*
2. *Textbook of Neurology- Victor Adams*
3. *Brains Clinical Neurology.*
4. *Illustrated Neurology & Neurosurgery*
5. *Brains Diseases of Nervous System*

Course Title: Clinical Cardiothoracic & Respiratory Conditions (Lab)	Course Code: BP354
Semester : **VI**	Core / Elective: **Program Core**
Teaching Scheme in Hrs (L:T:P) : **0:0:2**	Credits : 2
Type of course: **Lecture + Assignments**	Total Contact Hours : 24 hrs
Continuous Internal Evaluation : **60 Marks**	ESE : **40 Marks**

PRACTICAL

S.No.	Name Of Topic	Marks
1	Chart review & decision making	2
2	Physical examination	2
3	Auscultation methods	2
4	Breath sounds	2
5	Respiratory patterns	2
6	Various lung volumes	2
7	ABG interpretation	2
8	Mechanical ventilation	2
9	Screening & exercise testing	2
10	Pulmonary function test	2
	Viva	20
	TOTAL	40

Course Title: Clinical Medicine & Pediatrics (Lab)		Course Code: BP356	
Semester	: **VI**	Core / Elective: **Program Core**	
Teaching Scheme in Hrs (L:T:P)	: 0**:0:2**	Credits	: 2
Type of course: **Lecture + Assignments**		Total Contact Hours	: 24 hrs
Continuous Internal Evaluation	: **60 Marks**	ESE	: **40 Marks**

PRACTICAL

S.No.	Name Of Topic	Marks
1	APGAR score	2
2	Anthropometric measurements in paediatrics	2
3	Neonatal reflexes	2
4	Developmental milestones of children	2
5	Immunization schedule	2
6	Constituents of ORS	2
7	Examination of skin	2
8	Examination of abdomen	2
9	Examination of eye	2
10	Case study	2
	Viva	20
	TOTAL	40

Course Title: Clinical Orthopaedics & TraumatologyII (Lab)		Course Code: BP358	
Semester	: **VI**	Core / Elective: **Program Core**	
Teaching Scheme in Hrs (L:T:P)	0**:0:2**	Credits	: 2
Type of course: **Lecture + Assignments**		Total Contact Hours	: 24 hrs
Continuous Internal Evaluation	: **60 Marks**	ESE	: **40 Marks**

PRACTICAL

S.No.	Name Of Topic	Marks
1	Assessment of CTEV	2
2	Assessment of CDH	2
3	Assessment of Poliomyelitis	2
4	Assessment of back for back pain	2
5	Assessment of spine for spinal deformities	2
6	Assessment of amputation	2
7	Assessment of patient with TKR	2
8	Assessment of patient with THR	2
9	Assessment of traumatic paraplegia	2
10	Case study & presentation	2
	Viva	20

	TOTAL	**40**

Course Title: Clinical Neurology & Neurosurgery-II(Lab)	Course Code: BP360
Semester : **VI**	Core / Elective: **Program Core**
Teaching Scheme in Hrs (L:T:P) :0 **:0:2**	Credits : 2
Type of course: **Lecture + Assignments**	Total Contact Hours : 24 hrs
Continuous Internal Evaluation : **60 Marks**	ESE : **40 Marks**

PRACTICAL

S.No.	Name Of Topic	Marks
1	Gross motor examination	**2**
2	Fine motor examination	**2**
3	Oromotor examination	**2**
4	spinal reflexes examination	**2**
5	Brainstem reflexes examination	**2**
6	Mid brain reflexes	**2**
7	Cortical reflexes	**2**
8	Motor milestone examination	**2**
9	Automatic reflexes	**2**
10	Case study	**2**
	Viva	**20**
	TOTAL	**40**

Bachelor of Physiotherapy (BPT) 7th Semester

Course Title: PT in Orthopaedic Conditions-I	Course Code: BP401
Semester : **VII**	Core / Elective: **Program Core**
Teaching Scheme in Hrs (L:T:P) 3 :0:0	Credits: 3
Type of course: **Lecture + Assignments**	Total Contact Hours : 36 hrs
Continuous Internal Evaluation : **40 Marks**	ESE : **60 Marks**

Course Objectives: The subject serves to integrate the knowledge gained by the students in orthopedics and traumatology with skills to apply these in clinical situations of dysfunction and musculoskeletal pathology. The objective of the course is that after the specified hours of lectures and demonstrations the student will be able to identify disabilities due to musculoskeletal dysfunction, plan and set treatment goals and apply the skills gained in exercise therapy and electrotherapy in these clinical situations to restore musculoskeletal function.

Course Content:

Topic and Contents	Hours	Marks
UNIT-1: PT assessment for Orthopedic conditions	8	15
SOAP format, Pain assessment, Prescription of home program. Documentation of case records, and follow up.		
UNIT-2: Fracture & Dislocations	8	15
classification – types of displacements, methods of immobilization. Healing of fractures and factor influencing union, non-union, delayed union etc. Specific fracture of U/L & L/L Bones and their complete physiotherapeutic management		
UNIT-3: SPINE	8	10
• Physiotherapeutic management of fracture of spine with paraplegia and without neurodeficit		
UNIT-4: Soft tissue injury	6	10
Physiotherapy in relation to soft tissue injuries •		
UNIT 5: Amputation	6	10
Physiotherapy in relation to amputation		
TOTAL	**36**	**60**

Reference books-

1. Tidy's physiotherapy.
2. Textbook of orthopedics- Cash.

3. Clinical orthopedic rehabilitation- Brotzman.
4. Orthopedic physiotherapy - Jayant Joshi.
5. Physical Rehabilitation Assessment and Treament – O'Sullivan Schmitz
6. Sports physiotherapy- Maria Zuluaga

Course Title: PT in Neurological Conditions-I	Course Code: BP403
Semester : **VII**	Core / Elective: **Program Core**
Teaching Scheme in Hrs (L:T:P) :3 :0:0	Credits: 3
Type of course: **Lecture + Assignments**	Total Contact Hours : 36 hrs
Continuous Internal Evaluation : **40 Marks**	ESE : **60 Marks**

Course Objectives: The subject serves to integrate the knowledge gained by the students in neurology and neurosurgery with skills to apply these in clinical situations of dysfunction and neurological pathology. The objective of the course is that after the specified hours of lectures and demonstrations the student will be able to identify disabilities due to neurological dysfunction,plan and set treatment goals and apply the skills gained in exercise therapy and electrotherapy in these clinical situations to restore neurological function.

Course Content:

Topic and Contents	Hours	Marks
UNIT-1: Review	8	15
Review of basic Neuro - Anatomy and Physiology		
UNIT-2: Physiotherapy evaluation of a neurological patient	8	15
Physiotherapy evaluation of a neurological patient, electro diagnostic procedures, interpretations and prognosis in different neurological conditions, Upper and Lower motor neuron lesions		
UNIT-3: Principles of physiotherapy programs	8	10
• reeducation and retraining techniques in neurological conditions, approaches like: Bobath's / neuro developmental therapy, Rood's approach, PNF, Vojta techniques, biofeedback, Brunnstorm movement therapy.		
UNIT-4: **Neurological techniques.**	6	10

Motor Relearning programming, sensory integration therapy		
UNIT 5: Spinal cord injury	6	10
review of anatomy and physiology, Physiotherapy Assessment of Spinal cord injury, Principles of Physiotherapy at various stages of Spinal cord injury Rehabilitation goals and ADL training.		
TOTAL	**36**	**60**

Reference books

1. Tidy's physiotherapy.
2. Cash's Textbook of Neurology for Physiotherapists
3. Neurological Rehabilitation by D Umphred
4. Physical Rehabilitation Assessment and Treament – O'Sullivan Schmitz
5. Elements of Pediatric Physiotherapy-Eckersley

Course Title: PT in Cardiothoracic & Respiratory Conditions	Course Code: BP405
Semester : **VII**	Core / Elective: **Program Core**
Teaching Scheme in Hrs (L:T:P) :3:0:0	Credits: 3
Type of course: **Lecture + Assignments**	Total Contact Hours : 36 hrs
Continuous Internal Evaluation : **40 Marks**	ESE : **60 Marks**

Course Objectives: This subject follows the basic science subjects to provide the knowledge about relevant aspects of Cardiothoracic surgery. The student will have a general understanding of the surgical conditions the therapist would encounter in their practice. The objective of this course is that after lectures and discussion the student will be able to list the indications for surgery for cardiac conditions & respiratory conditions , etiology, clinical features and surgical methods for various conditions

Course Content:

Topic and Contents	Hours	Marks
UNIT-1: Assessment, Investigations and tests	8	15
• Bedside assessment of the patient • Exercise tolerance Testing – Cardiac & Pulmonary, Radiography, PFT, ABG, ECG, Hematological and Biochemical Tests		
UNIT-2: Techniques to increase lung volume	8	15

Controlled mobilization, positioning, breathing exercises, Neurophysiological Facilitation of Respiration, Mechanical aids – Incentive Spirometry, CPAP,IPPB		
UNIT-3: Techniques to clear secretions	8	10
• Hydration, Humidification & Nebulisation, Mobilisation and Breathing exercises, Postural Drainage, Manual techniques – Percussion, Vibration and Shaking, Rib Springing, ACBT, Autogenic Drainage, Mechanical Aids – PEP, Flutter, IPPB, Facilitation of Cough and Huff, Nasopharyngeal Suctioning		
UNIT-4: Techniques to decrease the work of breathing	6	10
• Measures to optimize the balance between energy supply and demand, positioning, Breathing re-education – Breathing control techniques, mechanical aids – IPPB, CPAP, BiPAP.		
UNIT 5: Physiotherapy management of conditions	6	10
• Chronic obstructive Pulmonary Disease • Pneumonia • Bronchiectasis • Pleural effusion & Empyema thoracis • Pneumothorax • Pnemenectomy • Thoracotomy • Lobectomy • Mastectomy • CABG		
TOTAL	**36**	**60**

Reference books-

1. General Surgical Operations – by Kirk / Williamson
2. Surgery by Nan
3. Bailey and Love's – Short Practice of Surgery
4. Chest Disease by Crofton and Douglas.
5. Patrica A Downie, Text book of Heart, Chest Vascular Disease for physiotherapists, JP Bros

Course Title: PT in Surgical, Obstetrics & Gynecological Conditions	Course Code: BP407
Semester: : **VII**	Core / Elective: **Program Core**
Teaching Scheme in Hrs (L:T:P) :3:0:0	Credits: 3
Type of course: **Lecture + Assignments**	Total Contact Hours : 36 hrs
Continuous Internal Evaluation : **40 Marks**	ESE : **60 Marks**

Course Objectives: The subject is designed to provide knowledge in assessing and planning physiotherapy interventions for Surgical conditions. The student must be able to reassess the patient as necessary, to monitor the patient in regard to treatment, to monitor the patient's vital signs , and to provide appropriate interventions to the patient.

Course Content:

Topic and Contents	Hours	Marks
UNIT-1: Management of wound ulcers	8	15
Care of ulcers and wounds - Care of surgical scars-U.V.R and other electro therapeutics for healing of wounds, prevention of Hypergranulated Scars • Keloids, Electrotherapeutics measures for relief of pain during mobilization of scars tissues.		
UNIT-2: Introduction to ICU & Burns management	8	15
• ICU monitoring –Apparatus, Airways and Tubes used in the ICU - Physiotherapy in the ICU – Common conditions in the ICU – Tetanus, Head Injury, Lung Disease, Pulmonary Oedema, Multiple Organ Failure, Neuromuscular Disease, Smoke Inhalation, Poisoning, Aspiration, Near Drowning, ARDS, Shock; Dealing with an Emergency Situation in the ICU • Role of physiotherapy in the management of burns, post grafted cases-Mobilization and Musculo-skeletal restorative exercises following burns		
UNIT-3: Abdominal Surgeries	8	10
• Management of Pulmonary Restorative Dysfunction following Surgical procedures on Abdomen and Thorax		
UNIT-4: Reproductive anatomy & Pregnancy	6	10
• Reproductive organs • (PFM).Pelvic floor muscle anatomy • Physiological changes during pregnancy • How to make exercise prescription for pre & post delivery • Pilates in pregnancy • Swiss ball exercise during ante natal & post natal period • Theraband exercises • Do's & don't's during pre & post delivery • Trimester wise exercise with precautions • Ergonomic care • How to reduce post delivery complications • Role of music therapy during pregnancy & delivery		

• Aqua exercise in pre & post natal period		
UNIT 5: Pelvic floor muscle dysfunction & Transvaginal Rehabilitation	6	10
• HET MMT for PFM, assessment methods for PFD,therapeutic exercise and rehabilitation protocol for PFD. • MMT,EMG, Electrical stimulation , Anderson technique, Thiele's technique, Glazer's protocol, MFR, Perineal Non- invasive/invasive rehab.devices, Transvaginal resistance training, efficient use of modalities like PF360, Vulvar ultrasound, IFT, Vulvar cryotherapy, vaginal dilator		
TOTAL	**36**	**60**

Reference books-

1. Tidy's physiotherapy.
2. Cash's Text Book of Chest, Heart, Vascular Disorders for Physiotherapists.
3. The Brompton Guide to chest physiotherapy DU Gasket [Completed]
4. Physical Rehabilitation Assessment and Treament – O'Sullivan Schmitz
5. Elements in Pediatric Physiotherapy – Pamela M Eckersley
6. Obstetrics & gynecology by D.C. Dutta & gynecology clerkship, Mathew S.Kaufman
7. First aid for the obstetrics
8. General Surgical Operations – by Kirk / Williamson

Course Title: PHYSIOTHERAPY ETHICS AND VALUES	Course Code: BP451
Semester : VII	Core / Elective: **Program Core**
Teaching Scheme in Hrs (L:T:P) : 2**:0:0**	Credits : 2
Type of course: **Lecture + Assignments**	Total Contact Hours : 24 hrs
Continuous Internal Evaluation : 6**0 Marks**	ESE : 4**0 Marks**

Course Objectives: The subject is designed to provide knowledge in assessing and planning physiotherapy interventions for Surgical conditions. The student must be able to reassess the patient as necessary, to monitor the patient in regard to treatment, to monitor the patient's vital signs , and to provide appropriate interventions to the patient.

Course Content:

Topic and Contents	Hours	Marks

UNIT-1: **History**	6	15
History of physiotherapy, Ethical principles in health care, Ethical principles related to physiotherapy, Scope of practice, Enforcing standards in health profession-promoting quality Care, Professional ethics in research, education and patient care delivery, Informed consent issues, Medical ethics and Economics in clinical decision-making.		
UNIT-2: **Rules of professional conduct**	6	15
• Physiotherapy as a profession • Relationship with patients • Relationship with health care institutions • Relationship with colleagues and peers • Relationship with medical and other professional.		
UNIT-3: **Confidentiality and Responsibility and IAP Rules and Regulations**	6	10
Confidentiality and Responsibility, Malpractice and negligence, Provision of services and, Advertising. Legal aspects: Consumer protection act, Legal responsibility of physiotherapist for their action in professional context and understanding liability and obligations in case of medico-legal action. **IAP -** Memorandum of Association & Rules and Regulations		
UNIT-4: **ADMINISTRATION AND SUPERVISION**	3	10
Introduction: Branches of administration, Nature and scope of administration, How to be an effective administrator, Planning hospital administration as part of a balanced health care program. -Principles of hospital administration and its applications to physiotherapy. -Planning and organization: Planning cycle, Principles of organizational charts, Resource and quality management, Planning change -innovation -Financial issues including budget and income generation		
UNIT 5: **Hospital administration and Personnel management**	3	10
Hospital administration: Organization, Staffing, Information, Communication, Coordination,		

-Cost of services, Monitoring and evaluation. -National health policy and health care system in India - Organization of physiotherapy department: Planning, Space, Manpower, Other basic resources. -Organizing meetings, committees, and negotiations. **Personnel management**: Personnel performance appraisal system, Quality care delivery from -The staff, -Material management, -Pharmacy -Hospital waste disposal - Quality assurance •Hospital acquired infection •Quality assurance through record review and medical audit. - Public relations in hospital and human resource management.		
TOTAL	**24**	**60**

Reference books-

1. Medical Ethics by C M Francis.
2. George V Lobo – Current Problems in Medical Ethics
3. Consumer Protection Act – 1986, Government of India, New Delhi.
4. Francis C M – Hospital Administration
5. Davies, R and Macaulay, BMC – Hospital Planning and Adminstration

Semester	: **VII**	Core / Elective: **Program Core**	
Teaching Scheme in Hrs (L:T:P)	: 0**:0:2**	Credits	: 2
Type of course: **Lecture + Assignments**		Total Contact Hours	: 24 hrs
Continuous Internal Evaluation	: **60 Marks**	ESE	: **40 Marks**

PRACTICAL

S.No.	Name Of Topic	Marks
1	Case study of fracture managed conservative	4
2	Case study of fracture managed surgically (ORIF)	4
3	Case study of spinal fracture management	4
4	Case study of Amputation	4
5	Case study of AS	4
	Viva	20
	TOTAL	40

Course Title:	PT in Neurological Conditions-I (Lab)	Course Code:	BP453
Semester	: **VII**	Core / Elective: **Program Core**	
Teaching Scheme in Hrs (L:T:P)	: 0**:0:2**	Credits	: 2
Type of course: **Lecture + Assignments**		Total Contact Hours	: 24 hrs
Continuous Internal Evaluation	: **60 Marks**	ESE	: **40 Marks**

PRACTICAL

S.No.	Name Of Topic	Marks
1	Case study of paraplegia	4
2	Case study of spinal deformities	4
3	Case study of hemiplegia	4
4	Case study of PIVD	4
5	Case study of PNI	4
	Viva	20
	TOTAL	40

Course Title:	PT in Cardiothoracic & Respiratory Conditions (Lab)	Course Code:	BP455
Semester	: **VII**	Core / Elective: **Program Core**	
Teaching Scheme in Hrs (L:T:P)	: 0**:0:2**	Credits	: 2
Type of course: **Lecture + Assignments**		Total Contact Hours	: 24 hrs
Continuous Internal Evaluation	: **60 Marks**	ESE	: **40 Marks**

PRACTICAL

S.No.	Name Of Topic	Marks
1	Case study of COPD	4
2	Case study of Pleural Effusion	4
3	Case study of CABG	4
4	Case study of Lobectomy	4
5	Case study of burn	4
	Viva	20
	TOTAL	40

Course Title: PT in Surgical, Obstetrics & Gynaecological Conditions (Lab)	Course Code: BP457
Semester : **VII**	Core / Elective: **Program Core**
Teaching Scheme in Hrs (L:T:P) : **0:0:2**	Credits : 2
Type of course: **Lecture + Assignments**	Total Contact Hours : 24 hrs
Continuous Internal Evaluation : **60 Marks**	ESE : **40 Marks**

PRACTICAL

S.No.	Name Of Topic	Marks
1	Case study of Diabetic ulcer	4
2	Case study of post operative abdominal surgery	4
3	Case study of Shock	4
4	Case study of pedal edema	4
5	Case study of antenatal phase in pregnancy	4
	Viva	20
	TOTAL	40

Bachelor of Physiotherapy (BPT) 8th Semester

Course Title: PT in Orthopaedic Conditions-II	Course Code: BP402
Semester: : **VIII**	Core / Elective: **Program Core**
Teaching Scheme in Hrs (L:T:P) :2 :0:0	Credits: 2
Type of course: **Lecture + Assignments**	Total Contact Hours : 24 hrs
Continuous Internal Evaluation : **40 Marks**	ESE : **60 Marks**

Course Objectives: The objective of the course is that after the specified hours of lectures and demonstrations the student will be able to identify disabilities due to musculoskeletal dysfunction, plan and set treatment goals and apply the skills gained in exercise therapy and electrotherapy in these clinical situations to restore musculoskeletal function

Course Content:

Topic and Contents	Hours	Marks
UNIT-1: Deformities	6	15
• Physiotherapy management of all congenital and acquired deformities.		
UNIT-2: Nerve injuries	6	15
• Physiotherapy management of focal & peripheral involvement.		
UNIT-3: Degenerative diseases	6	10
• Physiotherapy management of all degenerative joint disorders.		
UNIT-4: Orthopaedic surgeries	3	10
Physiotherapy in relation to Arthoplasty & Osteotomy.		
UNIT 5: Tendon Transfer	3	10
• Physiotherapy in relation to Tendon Transfer.		
TOTAL	**24**	**60**

Reference books-

1. Tidy's physiotherapy.
2. Textbook of orthopedics- Cash.
3. Clinical orthopedic rehabilitation- Brotzman.
4. Orthopedic physiotherapy - Jayant Joshi.
5. Physical Rehabilitation Assessment and Treament – O'Sullivan Schmitz
6. Sports physiotherapy- Maria Zuluaga

Course Title: PT in Neurological Conditions-II	Course Code: BP404
Semester: : **VIII**	Core / Elective: **Program Core**
Teaching Scheme in Hrs (L:T:P) :2 :0:0	Credits: 2
Type of course: **Lecture + Assignments**	Total Contact Hours : 24 hrs
Continuous Internal Evaluation : **40 Marks**	ESE : **60 Marks**

Course Objectives: The objective of the course is that after the specified hours of lectures and demonstrations the student will be able to identify disabilities due to neurological dysfunction, plan and set treatment goals and apply the skills gained in exercise therapy and electrotherapy in these clinical situations to restore neurological function.

Course Content:

Topic and Contents	Hours	Marks
UNIT-1: Therapeutic management	6	15
Stroke, meningitis, encephalitis, Parkinson's disease, Cerebral palsy, cerebellar lesions, Brain Tumors, Multiple Sclerosis, facial palsy. Motor neuron disease, Disseminated sclerosis, transverse myelitis, polio, syringomyelia, spina bifida, Neuropathies, neuromuscular junction disorders and myopathies		
UNIT-2: Peripheral nerve injuries, surgical resection & repair	6	15
Classification & types Functional assessment, investigation, diagnosis & prognosis Physiotherapeutic management Poly neuropathy		
UNIT-3: Traumatic brain injury	6	10
Types and Mechanisms of head injury Clinical features, potential complications Physiotherapy principles of immediate and postoperative therapeutic management		
UNIT-4: Neurosurgery	3	10

• Post surgical Physical therapy in neurosurgical procedures – craniotomy, shunts, SOL resection, surgical treatment of spasticity, cervical cord decompression		
UNIT 5: Functional outcome scales	3	10
• ASIA, PEDI, FIM, Berg balance		
TOTAL	**24**	**60**

Reference books

1. Tidy's physiotherapy.
2. Cash's Textbook of Neurology for Physiotherapists
3. Neurological Rehabilitation by D Umphred
4. Physical Rehabilitation Assessment and Treament – O'Sullivan Schmitz
5. Elements of Pediatric Physiotherapy-Eckersley

Course Title: PT in Medical & Paediatric conditions	Course Code: BP406
Semester: : **VIII**	Core / Elective: **Program Core**
Teaching Scheme in Hrs (L:T:P) :2:0:0	Credits: 2
Type of course: **Lecture + Assignments**	Total Contact Hours : 24 hrs
Continuous Internal Evaluation : **40 Marks**	ESE : **60 Marks**

Course Objectives: The student will have a general understanding of the diseases the therapist would encounter in their practice. The objective of this course is that after lectures and discussion the student will be able to list the etiology, pathology, clinical features and physiotherapy treatment methods for various medical conditions

Course Content:

Topic and Contents	Hours	Marks
UNIT-1: Assessment	6	15
• Bedside assessment of the patient		
UNIT-2: Food & Nutrition	6	15
• Physiotherapy management in Vitamin Deficiency Syndrome, osteoporosis, osteomalacia, Obesity		
UNIT-3: Physiotherapy in dermatology	6	10

Documentation of assessment, treatment and follow up skin conditions. U.V.R therapy in various skin conditions; Vitiligo; Hair loss; Pigmentation; Infected wounds ulcers. Faradic foot bath for Hyperhydrosis. Massage maneuvers for cosmetic purpose of skin; use of specific oil as medium; Care of anesthetic hand and foot; Evaluation, planning and management of leprosy-prescription, fitting and training with • prosthetic and orthotic devices		
UNIT-4: Common vascular disorders	3	10
• thrombosis, embolism, berger's disease,arteriosclerosis, thrombophlebitis, gangrene, hypertension		
UNIT 5: Edema	3	10
• classification & PT management		
TOTAL	**24**	**60**

Reference books-

1. Tidy's physiotherapy.
2. Cash's Text Book of Chest, Heart, Vascular Disorders for Physiotherapists.
3. The Brompton Guide to chest physiotherapy DU Gasket [Completed]

Course Title: Sports Rehabilitation	Course Code: BP408
Semester: : **VIII**	Core / Elective: **Program Core**
Teaching Scheme in Hrs (L:T:P) :2 :0:0	Credits: 2
Type of course: **Lecture + Assignments**	Total Contact Hours : 24 hrs
Continuous Internal Evaluation : **40 Marks**	ESE : **60 Marks**

Course Objectives: The objective of the course is that after the specified hours of lectures and demonstrations the student will be able to identify disabilities due to musculoskeletal dysfunction, plan and set treatment goals and apply the skills gained in exercise therapy and electrotherapy in these clinical situations to restore musculoskeletal function.

Course Content:

Topic and Contents	Hours	Marks

UNIT-1: Fundamental principles	6	15
• Principles of injury prevention • Principles of diagnosis: clinical assessment • Principles of diagnosis: Investigations including imaging • Principles of treatment • Core stability • Principles of rehabilitation • The preparticipation physical evaluation • Screening the elite athlete • Providing team care • Traveling with a team • Sports nutrition - eating for weight gain, weight loss, competition, training.		
UNIT-2: Common sports Issues	6	15
Facial injuries, Neck pain, Shoulder pain , Elbow and arm pain, Wrist, hand and finger injuries, Thoracic and chest pain, Low back pain, Anterior thigh pain, Posterior thigh pain, Acute knee injuries, Anterior knee pain , Lateral, medial and posterior knee pain, Shin pain ,Calf pain • Pain in the Achilles region, Acute ankle injuries, Ankle pain, Foot pain • Sport and exercise-associated emergencies: On-site management • Cardiovascular symptoms during exercise • Respiratory symptoms during exercise • Gastrointestinal symptoms during exercise • The athlete with epilepsy		
UNIT-3: Biomechanics of sports	6	10
• Throwing • Tennis • Running • Swimming		
UNIT-4: Sports psychology	3	10
• In brief details with theories.		
UNIT 5: Special Groups of Participants	3	10
• The younger athlete • Women and activity-related issues across the lifespan. • The older person who exercises • The disabled athlete		
TOTAL	**24**	**60**

Reference books-

1. Karim Khan sports physiotherapy .
2. Textbook of orthopedics- Cash.
3. Clinical orthopedic rehabilitation- Brotzman.
4. Orthopedic physiotherapy - Jayant Joshi.

Course Title: Research & Biostatistics	Course Code: BP410
Semester: : **VIII**	Core / Elective: **Program Core**
Teaching Scheme in Hrs (L:T:P) :2 :0:0	Credits: 2
Type of course: **Lecture + Assignments**	Total Contact Hours : 24 hrs
Continuous Internal Evaluation : **40 Marks**	ESE : 60 Marks

Course Objectives: This course will introduce to the student the basic research methodology, statistical concepts: methods of statistical analysis: and interpretation of data

Course Content:

Topic and Contents	Hours	Marks
UNIT-1: Introduction, research & measurements	6	15
• Introduction to Research methodology: Meaning of research, objectives of research, Motivation in research, Types of research & research approaches, Research methods vs methodology, Criteria for good research • Research design:Meaning of research design, Need for research design, Features for good design, Different research designs, Basic principles of research design • Measurement scales, sources of error in measurement, Technique of developing measurement tools, Meaning of scaling, its classification, important scaling techniques •		
UNIT-2: Methods of data collection	6	15
• collection of primary data, collection data through questionnaires & schedules, Difference between questionnaires & schedules.		
UNIT-3: Introduction to biostats , Tabulation of Data & Measures of Central Tendency	6	10
• Meaning, definition, characteristics of statistics. Importance of the study of statistics, Branches of statistics, Statistics and health science , Parameters and Estimates, Variables and their types, Measurement scales • Basic principles of graphical representation, Types of diagrams – histograms, frequency polygons, smooth frequency polygon, cumulative frequency curve, Normal probability curve.		

• Need for measures of central Tendency, Definition and calculation of Mean – ungrouped and grouped, interpretation and calculation of Median-ungrouped and grouped, Meaning and calculation of Mode, Geometric mean & Hormonic mean, Guidelines for the use of various measures of central tendency		
UNIT-4: Measures, Probability , Standard Distributions & correlations	3	10
• Range, mean deviation, standard deviation & variance. • Meaning of probability of standard distribution, the binominal distribution, the normal distribution, Divergence from normality – skewness, kurtosis • Significance, correlation coefficient, linear regression & regression equation • Testing of Hypotheses , Level of significance, Degrees of freedom .Chi-square test, test of Goodness of fit & student t-test. •		
UNIT 5: Analysis & sampling	3	10
Analysis of variance (ANOVA), what is ANOVA? Basic principle of ANOVA, ANOVA technique, Analysis of Co variance (ANACOVA) • Definition, Types- simple, random, stratified, cluster and double sampling. Need for sampling - Criteria for good samples, Application of sampling in community, Procedures of sampling and sampling designs errors		
TOTAL	**24**	**60**

Reference books-

1. Elements of Health Statistics: Rao.N.S.N
2. An introduction of Biostatistics: Sunder Rao.P.S.S.
3. Methods in Bio-Statistics 6th Edn. 1997: B.K. Mahajan
4. Biostatistics : A manual of Statistics Methods: K. Visweswara Rao

Course Title: Enterpreneurship	Course Code:
Semester: : **VIII**	Core / Elective: **Program Core**
Teaching Scheme in Hrs (L:T:P) :2 :0:0	Credits: 2
Type of course: **Lecture + Assignments**	Total Contact Hours : 24 hrs
Continuous Internal Evaluation : **40 Marks**	ESE : 60 Marks

Course Objectives: This course will introduce to the process of developing, organizing, and running a new business to generate profit while taking on financial risk.

Course Content:

Topic and Contents	Hours	Marks
UNIT-1: **Introduction, Owner of Physiotherapy Clinics**	6	15
1. Owner of Physiotherapy Clinics - Management - Development - Promotion - Financial management 2. Owner of Health & Fitness Clubs - Management - Development - Promotion - Financial management 3. Owner of Physiotherapy and slimming center. - Management - Development - Promotion		
UNIT-2: **Owner of Allied Health Clubs**	6	15
1. Industrial & Corporate Health Advisor. - Health advisor, health issues, current health updates 2. Owner of Allied Health Clubs (e.g. Yoga, SPA, acupressure) - Management - Development - Promotion - Financial management 3. Owner of Physiotherapy equipment agency. - Management - Development - Promotion		

- Financial management		
UNIT-3: **Rehabilitation centers**	6	10
Owner of rehabilitation centre or physiotherapy hospital - Management - Development - Promotion - Financial management Owner of physiotherapy outsourcing company - Management - Development - Promotion (collaboration with hospitals and health sectors) - Financial management		
UNIT-4: Rehabilitation Clubs	3	10
Owner of private physiotherapy clubs attached to Sports academy or athletes - Management - Development (short term courses, recent advancements) - Promotion - Financial management		
UNIT 5: Community Clubs	3	10
. Owner of Community physiotherapy care clubs or agencies - Management - Development (seminars, general awareness) - Promotion - Financial management		
TOTAL	**24**	**60**

Reference books-

- Dream With Your Eyes Open by Ronnie Screwvala. ...
- Bhaag by Ganesh V. ...
- Connect The Dots by Rashmi Bansal.

Course Title: RESEARCH PROJECT		Course Code: BP452	
Semester	: VIII	Core / Elective: **Program Core**	
Teaching Scheme in Hrs (L:T:P)	: 0**:0:2**	Credits	: 2
Type of course: **Lecture + Assignments**		Total Contact Hours	: 24 hrs
Continuous Internal Evaluation	: 6**0 Marks**	ESE	: 4**0 Marks**

Course Objectives: This course will improve students knowledge in research activities.

Course Contents:- Research Project

Synopsis and Thesis Should be made by every Student.

Course Title: PT in Orthopaedic Conditions-II (Lab)		Course Code: BP452	
Semester	: **VIII**	Core / Elective: **Program Core**	
Teaching Scheme in Hrs (L:T:P)	: 0**:0:2**	Credits	: 2
Type of course: **Lecture + Assignments**		Total Contact Hours	: 24 hrs
Continuous Internal Evaluation	: **60 Marks**	ESE	: **40 Marks**

PRACTICAL

S.No.	Name Of Topic	Marks
1	Case study of Tendon transfer	4
2	Case study of wrist drop	4
3	Case study of CTEV	4
4	Case study of scoliosis	4
5	Case study bow legs	4
	Viva	20

	TOTAL	**40**

Course Title: PT in Neurological Conditions-II (Lab)	Course Code: BP454
Semester : **VIII**	Core / Elective: **Program Core**
Teaching Scheme in Hrs (L:T:P) : **0:0:2**	Credits : 2
Type of course: **Lecture + Assignments**	Total Contact Hours : 24 hrs
Continuous Internal Evaluation : **60 Marks**	ESE : **40 Marks**

PRACTICAL

S.No.	Name Of Topic	Marks
1	Case study of CP	**4**
2	Case study of Head injury	**4**
3	Case study of Parkinson	**4**
4	Case study of polio	**4**
5	Case study meningitis	**4**
	Viva	**20**
	TOTAL	**40**

Course Title: PT in Medical & Paediatric Conditions (Lab)	Course Code: BP456
Semester : **VIII**	Core / Elective: **Program Core**
Teaching Scheme in Hrs (L:T:P) : **0:0:2**	Credits : 2
Type of course: **Lecture + Assignments**	Total Contact Hours : 24 hrs
Continuous Internal Evaluation : **60 Marks**	ESE : **40 Marks**

PRACTICAL

S.No.	Name Of Topic	Marks
1	Case study of DMD	**4**
2	Case study of autism	**4**
3	Case study of MR	**4**
4	Case study of Spina Bifida	**4**
5	Case study hydrocephalus	**4**
	Viva	**20**
	TOTAL	**40**

Course Title: Sports Rehabilitation (Lab)	Course Code: BP458

Semester	: **VIII**	Core / Elective: **Program Core**	
Teaching Scheme in Hrs (L:T:P)	: 0**:0:2**	Credits	: 2
Type of course: **Lecture + Assignments**		Total Contact Hours	: 24 hrs
Continuous Internal Evaluation	: **60 Marks**	ESE	: **40 Marks**

PRACTICAL

S.No.	Name Of Topic	Marks
1	Case study of ACL injury	4
2	Case study of athletic syncope	4
3	Case study of ankle sprain	4
4	Case study of rotator cuff tear	4
5	Case study scapular instability	4
	Viva	20
	TOTAL	40

INTERNSHIP

There shall be six months 180 days of internship after the final Semester examination for candidates declared to have passed their final semester examination in all the subjects. Internship should be done in any hospital recognized by the university.

No candidate shall be awarded degree certificate without successfully completing six months of internship. The internship should be rotator and will cover clinical branches concerned with physiotherapy such as orthopedics, cardiothoracic including ICU, Neurology, Pediatrics, General Medicine, General Surgery, Obstetrics and Gynecology both inpatient and outpatient services.
The 6 months of rotational posting must be covered in the following pattern.

Sl. No.		Duration
1.	Physiotherapy OPD, Emergency and Traumatology Ward, Sports training	1 Month
2.	Physiotherapy OPD, Orthopedic wards (including OPD and IPD)	1 Month
3.	Physiotherapy OPD, General Medicine and CardioThoracic wards (including MICU and CCU)	1 Month
4.	Physiotherapy OPD, General Surgery wards (including CTS wards, CTS-ICU and Burns Unit)	1 Month
5.	Physiotherapy OPD, Neurology and Neurosurgery wards, Psychiatric Ward (including Neuro ICU)	1 Month
6.	Physiotherapy OPD, Obstetrics and Gynecology ward and Pediatric Ward (including PICU)	1 Month

Successful Completion – The student must maintain a logbook. On completion of each posting, the same will have to be certified by the faculty in charge of the posting for both attendance as well as work done. On completion of all six postings, the duly completed logbook will be submitted to the Principal/Head of program to be considered as having successfully completed the internship program.