JHARKHAND
Rai University

Bachelor of Physiotherapy (BPT)

ACADEMIC SESSION
2024 - 2028

Raja Ulatu | Namkum | Ranchi | Jharkhand
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Vision of the University

The vision envisages augmenting the cause of education at all levels. As a catalyst for developing engaged and employable workforce, JRU envisions making a compelling transformation to the world through education, research and innovation that will make difference to the society and mankind.

Mission of the University

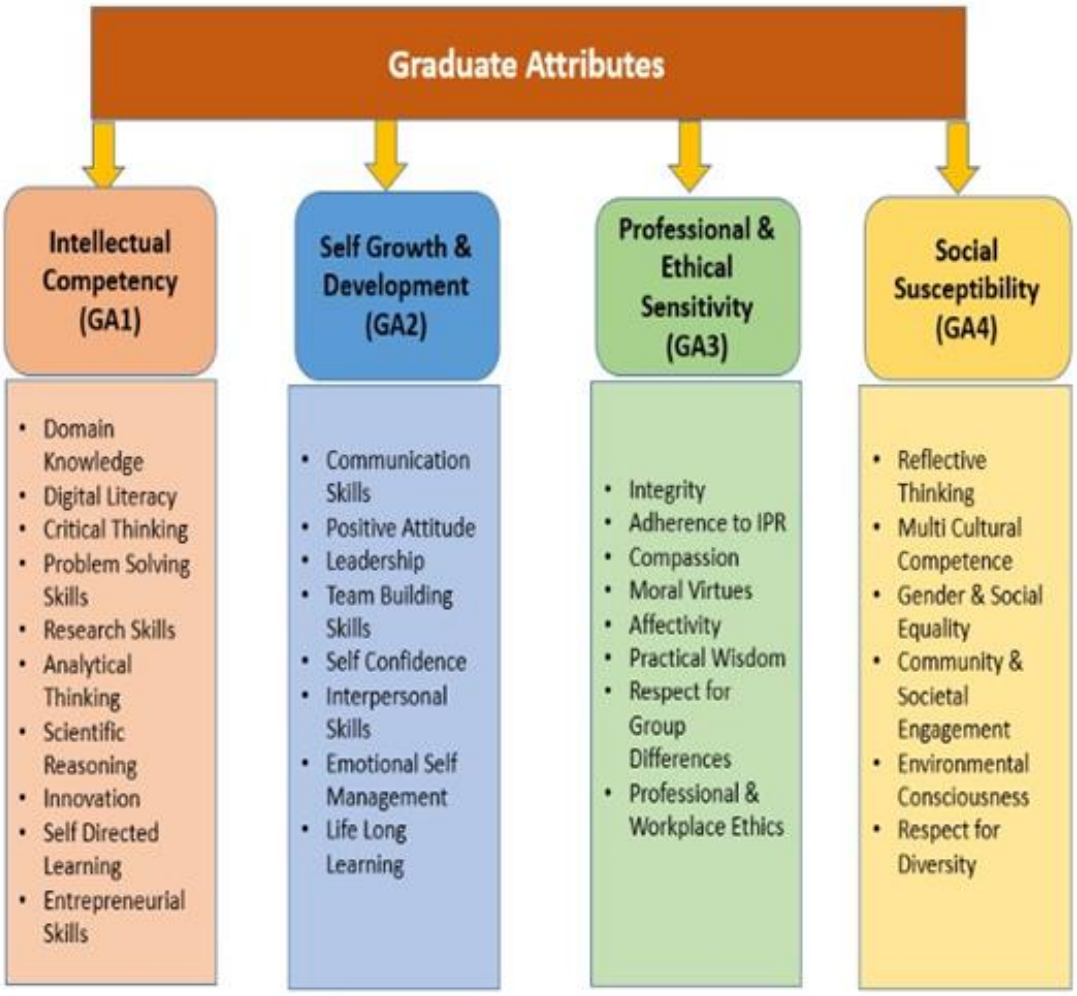
We endeavor to create the best possible learning environment for our students through dynamic research, rigorous training and efficient mentorship and are committed to the cause of making higher education accessible to all irrespective of caste, color or creed. To create an atmosphere of rigor and discipline through innovative education that helps students to understand all aspects of societal challenges and enable them to works in team to tackle multifarious problems that directly benefit society.

Graduate Attributes

Jharkhand Rai University is a mecca of transformative education which strongly believes in the holistic development of students. The university provides the cutting-edge of holistic learning to develop promising youngsters into leaders of tomorrow with globally relevant, future-ready and actionable intelligence. The objective of the Department is to make each student proficient in synthesizing/analyzing information and be ethical, socially responsible, and just when making decisions. JRU ensures inclusive and equitable quality education and promote lifelong learning opportunities for all.

Every graduate of the Department will be developed to possess the following attributes:

1. Intellectual Competency
2. Self-Growth & Development
3. Professional & Ethical Sensitivity
4. Social Susceptibility



DEPARTMENT OF PHYSIOTHERAPY

About the Department

The Department of Physiotherapy was established in the year 2021. The programme envisages the development of certain skills and knowledge which are enumerated in the Programme Outcomes (POs). The programme curriculum comprising of theory, lab practical, hospital and clinic visits, Hospital training and project works enables/satisfy the programme specific criteria for Physiotherapy Education. In addition to the core Physiotherapy subjects, a number of program specific elective & open elective subjects have been incorporated to enable the students to attain a high level of competence and proficiency in the field of Physiotherapy. The course curriculum is not static and is periodically revised and improved to keep in time with the technology and therapeutic developments in the domain of Physiotherapy. Our students participate regularly in Seminar/ workshop events organized by other institutes and get appreciation. The department strives to remain in the forefront by regular credit based professional training in hospital, community & Clinics throughout the Ranchi.

Program Educational Objectives (PEOs)

PEOs (Program Educational Objectives) relate to the career and professional accomplishments of passed out students after their graduation from the program. However, keeping the significance of contribution of the curriculum and the assessment opportunities such as examination and evaluation results, placement data, employer feedback and higher education entrance performance etc. are taken as tools for supplementary evidence to assess PEOs. The program educational objectives of the undergraduate program in Physiotherapy take into consideration the university mission and the constituents' needs by producing graduates who will be able to

PEO 1	To apply knowledge and skills of physiotherapeutic education and facilitate their overall professional development for rehabilitation through proper practical and theoretical learning.
PEO 2	Able to execute health care projects and camp for extending awareness in society about correct physiotherapeutic measures.
PEO 3	To execute ethical practice as physiotherapist in professional and social contexts that govern decision making.
PEO 4	To respect for the dignity of the patient and lead a team in an inter-disciplinary environment in order to ensure clinical productivity and patient satisfaction.
PEO 5	To prepare the graduates for patient therapist relationship by adapting empathy in their clinical practice
PEO 6	To open doors of employment by inculcating core values of patient care empathy and patience through frequent physiotherapy postings and internships training at various leading hospitals and clinics.

Program Outcome (POs)

BPT Graduates will be able to:

PO 1	To demonstrate behavioral skills and humanitarian approach whole communicating with patients, relatives, society at large and co-professionals
PO 2	To apply knowledge and will have healthy Physiotherapist-Patient relationship.
PO 3	To demonstrate and relate moral, ethical values and legal aspects concerned with physiotherapy management.
PO 4	To demonstrate academic skills and knowledge related to understanding the structural and functional of human body and applied anatomy, physiology in physiotherapy practice
PO 5	To apply and outline pathology of medical conditions in context with Physiotherapy, interpret & use medical communication.
PO 6	To apply knowledge of biomechanics of human movement in musculoskeletal, neurological and cardio-respiratory conditions in planning, recommending, and executing physiotherapy management.
PO 7	To outline and implement Physiotherapy management by co-relating assessment band examination skills of clinical subjects like Orthopedics, General Surgery, Medicine, Neurology, Pediatrics, Dermatology & Gynecology & Obstetrics, Community Medicine and Sociology.
PO 8	To demonstrate skill in maneuvers of passive movements, massage, stretching, strengthening, and various manual therapy techniques. Students will integrate Physiotherapy evaluation skills including electro diagnosis on patients to arrive at a functional/ Physical diagnosis in musculoskeletal, neurological, cardiovascular and pulmonary conditions.
PO 9	To describe and analyze concepts of energy conservation, global warming and pollution and justify optimal use of available resources.
PO 10	To demonstrate ability of critical thinking, scientific enquiry, experimental learning, personal finance, entrepreneurship and managerial skills related to task in day to day work for personal & societal growth.
PO 11	To demonstrate and apply basic computer application for data management, data storage generating data bases and for research purposes.

Program Specific Outcome (PSOs)

BPT Graduates will have

PSO 1	To develop a comprehensive approach towards healthcare and to understand the core of Anatomy, Physiology, Biomechanics of human body and its application in Physiotherapy Practice.
PSO 2	Apply knowledge and skills of Physiotherapeutic education to facilitate their overall professional development for rehabilitation. Organize and implement the preventive, investigative and management plans and will offer appropriate follow-up services.
PSO 3	Identify priorities and effectively manage time and resources to ensure the maintenances or enhancement of the quality of care. Undertaking health care projects and camps for extending awareness in society about correct physiotherapeutic movements.
PSO 4	Aim to lead a team in an inter-disciplinary or multi-disciplinary environment in order to ensure clinical productivity and patient satisfaction. Understand core concept of clinical ethics and law so that they may apply these to their practice as physiotherapists.
PSO 5	Categorically, able to communicate with patients/ clients, care-giver, other health professionals and other members of the community effectively and appropriately. Understand the role of using modern tools and techniques for better patient compliance.

Mapping between PEO and PSO

Program Specific Outcome (PSO)	Program Educational Objective (PEO)					
	PEO 1	PEO 2	PEO 3	PEO 4	PEO 5	PEO 6
PSO 1	H					
PSO 2	H		L			
PSO 3		H			L	
PSO 4	H		M	H		
PSO 5						L

(Level of Correlation: 3-High, 2-Medium, 1-Low)

Mapping of PEO and PO

(Level of Correlation: 3-High, 2-Medium, 1-Low)

Program Outcome (PO)	Program Educational Objective (PEO)					
	PEO 1	PEO 2	PEO 3	PEO 4	PEO 5	PEO 6
PO 1		M	L			M
PO 2			M		M	
PO 3			H			L
PO 4	H			L		L
PO 5	L					
PO 6	H			M		
PO 7	M			H		
PO 8	M					
PO 9	L					L
PO 10					M	M
PO 11				L		L

Course Components of BPT (210 Credits)

Course Component	Curriculum Content (Total no. of credits of the Programme)	Curriculum Content (% of credits of the Programme)	PEO's	PO's
Major Interdepartmental course	50	23.90%	PEO 4	PO 4, PO 7
Minor Interdepartmental Course	17	8.01%	PEO 4	PO 5
Major Departmental Course	108	51.43%	PEO 1, PEO 2, PEO 3, PEO 4, PEO 5, PEO 6	PO 2,PO 3, PO 4, PO 5, PO 6, PO 7, PO 8, PO 10
Humanities & Social Sciences (Ability Enhancement/ value – added course imparting transferable and life skills)*	12	5.71%	PEO 1, PEO 5, PEO 6	PO 1, PO 3
Elective Course	6	2.86%	PEO 4, PEO 6	PO 3, PO 10
Multidisciplinary/ Mandatory Course	15	7.14%	PEO 1, PEO 2, PEO 5	PO 1, PO 2, PO 10
Research Project/ Dissertation	2	0.95	PEO 1, PEO 2, PEO 3, PEO 4, PEO 5	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11

* **Humanities & Social Sciences** (value – added course imparting transferable and life skills which is qualify is essential, which can be credit or noncredit course).

DETAILED ASSESSMENT SCHEME

Assessment Scheme					
CIA - Continuous Internal Assessment (Marks 50)					
Assessment Parameters	**Assessment Tools**	**Marks**	**Percentage %**	**Bloom's Taxonomy Category**	**Bloom's Taxonomy Level LOT/HOT**
Assignment 1	Assignment consisting of minimum 5 Questions	10	33.3	Remember, Understand, Apply	LOT
Assignment 2	Quiz, Case Studies, Presentations, Group Discussion, Lab work, Project or any other activity	10	33.3	Analyze, Evaluate, Create	HOT
Teacher Assessment/ Class Participation					
Class Participation	Brainstorming, Discussion, Attendance, Extempore or any other activity	5	16.67		
EC & CC Activities	Extracurricular & Co-Curricular Activities	5	16.67		

ESE - End Semester Examination (70 Marks)			
Bloom's Taxonomy Category	**ESE Question Paper Section**	**Percentage %**	**Bloom's Taxonomy Level LOT/ HOT**
Remember	A	30	LOT
Understand	A		
Apply	B	40	LOT/HOT
Analyze	B		
Evaluate & Create	C	30	HOT

COURSE SCHEME BATCH 2024 - 2028												
BACHELOR OF PHYSIOTHERAPY												
CHOICE BASED CREDIT SYSTEM												
				Periods			Evaluation Scheme					
NSQF/ NCrF Level at Entry/Equivalent Grade/ Years of Academic Education	**S. No**	**Course Code**	**Course Title**	**L**	**T**	**P**	**Assignment/ Record Book**	**TA**	**Total**	**ESE**	**Subject Total**	**Credit**
Level 4.5	**SEMESTER I**											
	MAJOR INTERDEPARTMENTAL COURSE											
	1	23A101	Anatomy - I	5	0	0	20	10	30	70	100	5
	2	23A102	Physiology - I	5	0	0	20	10	30	70	100	5
	MULTIDISCIPLINARY/ MANDATORY COURSE											
	3	23A103	Psychology	4	0	0	20	10	30	70	100	4
	4	23A104	Energy & Environmental Sciences	5	0	0	20	10	30	70	100	3
	ABILITY ENHANCEMENT COURSE											
	5	40BPT. 104	Communication Skills	2	0	0	20	10	30	70	100	2
	PRACTICAL/SESSIONAL											
	MAJOR INTERDEPARTMENTAL COURSE											
	1	23A101P	Anatomy – I Practical	0	0	2	20	10	30	20	50	1
	2	23A102P	Physiology – I Practical	0	0	2	20	10	30	20	50	1
									TOTAL		**600**	**21**

Level 4.5	**SEMESTER II**												
				Periods			**Evaluation Scheme**						
	S. No	**Course Code**	**Course Title**	**L**	**T**	**P**	**Assignment/ Record Book**	**TA**	**Total**	**ESE**	**Subject Total**	**Credit**
			MAJOR INTERDEPARTMENTAL COURSE									
	1	23A201	Anatomy – II	5	0	0	20	10	30	70	100	5
	2	23A202	Physiology - II	4	0	0	20	10	30	70	100	4
	MINOR INTERDEPARTMENTAL COURSE											
	3	23A205	Biochemistry	4	0	0	20	10	30	70	100	4
			MULTIDISCIPLINARY/ MANDATORY COURSE									
	4	23A203	Sociology	4	0	0	20	10	30	70	100	4
			MAJOR DEPARTMENTAL COURSE									
	5	23A204	Fundamentals of Biomechanics & Exercise Therapy	4	0	0	20	10	30	70	100	4
	COMMON VALUE ADDED COURSE											
	6	23AVAC101	Character Building and Holistic Development of Personality – I (Spiritual and Mental Health)	2	0	0	40	10	50	50	100	2
	PRACTICAL											
	MAJOR INTERDEPARTMENTAL COURSE											
	1	23A201P	Anatomy – II Practical	0	0	2	20	10	30	20	50	1
	2	23A202P	Physiology – II Practical	0	0	2	20	10	30	20	50	1
			MAJOR DEPARTMENTAL COURSE									
	3	23A204P	Fundamentals of Biomechanics & Exercise Therapy Practical	0	0	2	20	10	30	20	50	1
									TOTAL		**800**	**26**

Level 5	**SEMESTER III**												
	S. No	**Course Code**	**Course Title**	**Periods**			**Evaluation Scheme**						
				L	**T**	**P**	**Assignment / Record Book**	**TA**	**Total**	**ESE**	**Subject Total**	**Credit**
	MINOR INTERDEPARTMENTAL COURSE												
	1	23A301	Pathology & Microbiology	4	0	0	20	10	30	70	100	4
	MAJOR DEPARTMENTAL COURSE												
	2	23A302	Biomechanics - I	3	0	0	20	10	30	70	100	3
	3	23A303	Advance Exercise Therapy - I	4	0	0	20	10	30	70	100	4
	4	23A304	Principles of Bioelectrical Modalities - I	4	0	0	20	10	30	70	100	4
	ABILITY ENHANCEMENT COURSE												
	5	40BPT.153	Professional Skills	2	0	0	20	10	30	70	100	2
	PRACTICAL												
	MAJOR DEPARTMENTAL COURSE												
	1	23A302P	Biomechanics – I Practical	0	0	2	20	10	30	20	50	1
	2	23A303P	Advance Exercise Therapy – I Practical	0	0	4	20	10	30	20	50	2
	3	23A304P	Principles of Bioelectrical Modalities – I Practical	0	0	4	20	10	30	20	50	2
									TOTAL		**650**	**22**

Level 5	**SEMESTER IV**												
	S. No	**Course Code**	**Course Title**	**Periods**			**Evaluation Scheme**						
				L	**T**	**P**	**Assignment/ Record Book**	**TA**	**Total**	**ESE**	**Subject Total**	**Credit**	
	MINOR INTERDEPARTMENTAL COURSE												
	1	23A401	Pharmacology	4	0	0	20	10	30	70	100	4	
	MAJOR DEPARTMENTAL COURSE												
	2	23A402	Biomechanics - II	3	0	0	20	10	30	70	100	3	
	3	23A403	Advance Exercise Therapy - II	4	0	0	20	10	30	70	100	4	
	4	23A404	Principles of Bioelectrical Modalities - II	4	0	0	20	10	30	70	100	4	
	COMMON VALUE ADDED COURSE												
	5	23AVAC201	Character Building and Holistic Development of Personality – II (Yoga and Fitness)	2	0	0	40	10	50	50	100	2	
	PRACTICAL												
	MAJOR DEPARTMENTAL COURSE												
	1	23A402P	Biomechanics – II Practical	0	0	2	20	10	30	20	50	1	
	2	23A403P	Advance Exercise Therapy – II Practical	0	0	4	20	10	30	20	50	2	
	3	23A404P	Principles of Bioelectrical Modalities – II Practical	0	0	4	20	10	30	20	50	2	
	MINOR INTERDEPARTMENTAL COURSE												
	4	23A406P	Radiology Practical	0	0	3	20	10	30	20	50	1	
									TOTAL		**700**	**23**	

Level 5.5	**SEMESTER V**											
	S. No	**Course Code**	**Course Title**	**Periods**			**Evaluation Scheme**					
				L	**T**	**P**	**Assignment/ Record Book**	**TA**	**Total**	**ESE**	**Subject Total**	**Credit**
			MAJOR INTERDEPARTMENTAL COURSE									
	1	23A501	Orthopaedics	4	0	0	20	10	30	70	100	4
	2	23A502	Neurology	4	0	0	20	10	30	70	100	4
	3	23A503	Cardiopulmonary	4	0	0	20	10	30	70	100	4
	4	23A504	Medicine with Pediatrics & Geriatrics - I	4	0	0	20	10	30	70	100	4
	VALUE ADDED / DEPARTMENTAL ELECTIVE COURSE GROUP-A - (Students have to choose any One course)											
	5	23ADE01	Medical Record Keeping	2	0	0	2	10	30	70	100	2
		23ADE02	Emergency Care	2	0	0	2	10	30	70	100	2
		23ADE03	Fitness & Health Management	2	0	0	2	10	30	70	100	2
		23ADE04	Nutrition for Health	2	0	0	2	10	30	70	100	2
	COMMON VALUE ADDED COURSE											
	6	23AVAC301	Character Building and Holistic Development of Personality – I (Universal Human Values and Ethics)	2	0	0	40	10	50	50	100	2
	PRACTICAL											
	MAJOR INTERDEPARTMENTAL COURSE											
	1	23A501P	Orthopaedics Practical	0	0	4	20	10	30	20	50	2
	2	23A503P	Cardiopulmonary Practical	0	0	4	20	10	30	20	50	2
	MAJOR DEPARTMENTAL COURSE											
	3	23A506P	PT Clinicals - I	0	0	12	80	20	100	100	200	8
									TOTAL		**900**	**32**

Level 5.5	**SEMESTER VI**											
	S. No	**Course Code**	**Course Title**	**Periods**			**Evaluation Scheme**					
				L	**T**	**P**	**Assignment/ Record Book**	**TA**	**Total**	**ESE**	**Subject Total**	**Credit**
	MAJOR INTERDEPARTMENTAL COURSE											
	1	23A601	General Surgery with Obstetrics & Gynaecology	4	0	0	20	10	30	70	100	4
	MAJOR DEPARTMENTAL COURSE											
	2	23A602	Physiotherapy in Orthopaedics Conditions	4	0	0	20	10	30	70	100	4
	3	23A603	Physiotherapy in Cardiopulmonary Conditions	4	0	0	20	10	30	70	100	4
			MAJOR INTERDEPARTMENTAL COURSE									
	4	23A604	Medicine with Paediatrics & Geriatrics - II	3	0	0	20	10	30	70	100	3
	VALUE ADDED/ DEPARTMENTAL ELECTIVE COURSE GROUP-B - (Students have to choose any One course)											
	5	23ADE05	Stress Management by Yoga	2	0	0	2	10	30	70	100	2
		23ADE06	Physical Diagnosis and Prescription	2	0	0	2	10	30	70	100	2
		23ADE07	Cardiopulmonary Resuscitation and Rehabilitation	2	0	0	2	10	30	70	100	2
		23ADE08	Evaluation Method & Outcome Measures	2	0	0	2	10	30	70	100	2
	ABILITY ENHANCEMENT COURSE											
	6	40BPT.203	Leadership and Management Skills	2	0	0	20	10	30	70	100	2
	PRACTICAL											
	MAJOR DEPARTMENTAL COURSE											

	1	23A602P	Physiotherapy in Orthopaedics Conditions Practical	0	0	4	20	10	30	20	50	2
	2	23A603P	Physiotherapy in Cardiopulmonary Conditions Practical	0	0	4	20	10	30	20	50	2
	3	23A606P	PT Clinicals - II	0	0	12	80	20	100	100	200	8
									TOTAL		**900**	**31**

	SEMESTER VII											
	S. No	**Course Code**	**Course Title**	**Periods**			**Evaluation Scheme**					
				L	**T**	**P**	**Assignment/ Record Book**	**TA**	**Total**	**ESE**	**Subject Total**	**Credit**
	MAJOR DEPARTMENTAL COURSE											
Level 6	1	23A701	Rehabilitation & Physiotherapy Ethics	3	0	0	20	10	30	70	100	3
	2	23A702	Physiotherapy in Neurological Conditions - I	4	0	0	20	10	30	70	100	4
	3	23A703	Physiotherapy in Sports Conditions - I	4	0	0	20	10	30	70	100	4
	MAJOR INTERDEPARTMENTAL MANDATORY COURSE											
	4	23A704	Research Methodology & Biostatistics	4	0	0	20	10	30	70	100	4
	SKILLS ENHANCEMENT/ OPEN ELECTIVE COURSE (Students have to choose any One course Or from SWAYAM - MOOCs)											
	5	23AOE01	Principles of Management	2	0	0	2	10	30	70	100	2
		23AOE03	Universal Human Value & Ethics	2	0	0	2	10	30	70	100	2
		23AOE04	Entrepreneurship in Health Sectors	2	0	0	2	10	30	70	100	2
		23AOE05	Disaster Risk Management for Health	2	0	0	2	10	30	70	100	2

		23AOE06	Personality Development Through Life Enlightment	2	0	0	2	10	30	70	100	2
	ABILITY ENHANCEMENT COURSE											
	6	40BPT.352	Soft Skills and Interpersonal Communication	2	0	0	20	10	30	70	100	0
	PRACTICAL											
	MAJOR DEPARTMENTAL COURSE											
	1	23A702P	Physiotherapy in Neurological Conditions – I Practical	0	0	4	20	10	30	20	50	2
	2	23A703P	Physiotherapy in Sports Conditions – I Practical	0	0	4	20	10	30	20	50	2
	3	23A705P	PT- Clinicals - III	0	0	12	80	20	100	100	200	8
									TOTAL		**900**	**29**

	SEMESTER VIII											
	S. No	**Course Code**	**Course Title**	**Periods**			**Evaluation Scheme**					
				L	**T**	**P**	**Assignment/ Record Book**	**TA**	**Total**	**ESE**	**Subject Total**	**Credit**
	MINOR INTERDEPARTMENTAL COURSE											
	1	23A801	Prosthetics & Orthotics	4	0	0	20	10	30	70	100	4
	MAJOR DEPARTMENTAL COURSE											
	2	23A802	Physiotherapy in Neurological Conditions - II	4	0	0	20	10	30	70	100	4
	3	23A803	Physiotherapy in Sports Conditions -II	4	0	0	20	10	30	70	100	4
Level 6	**ABILITY ENHANCEMENT COURSE**											
	4	40BPT.401	Seminar in Executive Communication	2	0	0	20	10	30	70	100	0
	PRACTICAL											
	MAJOR DEPARTMENTAL COURSE											
	1	23A802P	Physiotherapy in Neurological Conditions – II Practical	0	0	4	20	10	30	20	50	2
	2	23A803P	Physiotherapy in Sports Conditions – II Practical	0	0	4	20	10	30	20	50	2
	3	23A805P	PT Clinicals - IV	0	0	12	80	20	100	100	200	8
	RESEARCH PROJECT/ DISSERTATION											
	5	23A806P	Project	0	0	3			50	50	100	2
									TOTAL		**800**	**26**

GUIDELINES FOR SIX MONTHS COMPULSORY ROTATORY INTERNSHIP TRAINING PROGRAMME	
1	All student of Bachelor of Physiotherapy must undergo a Compulsory Rotatory Internship for a period of six month approved by the university after passing all examination in all subjects/ courses.
2	Internship is a phase of training where in a graduate is expected to conduct actual practice of physiotherapy and health care and acquire skills under super vision so that he/she may become capable off functioning independently.
3	Internship is a phase of training where in a candidate is expected to conduct actual Physiotherapy practice, with fair independence in clinical decision making in low-risk cases where as to work under supervision at high-risk areas; so that at the end of Internship he/she is capable to practice Physiotherapy independently

4	The Internship programme shall mainly focus on acquisition of specific skills listed in the major area skill training by – hands on experience & also on ability to conduct a specific projects

Bachelor of Physiotherapy (BPT)

FIRST SEMESTER SYLLABUS

Program: Bachelor of Physiotherapy (BPT)
Semester: First
Course: Anatomy - 1
Course Code: 23A101

L	T	P	Credits
5	0	0	5

COURSE LEARNING OBJECTIVE:

CLO1: To learn about basic anatomy of upper and lower limb
CLO2: To gain knowledge about movement possible in each joint
CLO3: To give impact knowledge, so that utilize same in future practice.

COURSE OUTCOME

At the end of course, candidate will able to

CO1: The student should be able to identify & describe Anatomical aspects of muscle bones & joints, & to understand and analyze movements.

CO2: To understand the Anatomical basis of various clinical condition e.g. trauma, deformities, pertaining to limbs.

CO3: To be able to localize various surface land-marks.

CO4: To identify & describe the source & course of major arterial venous & lymphatic system, with special emphasis to extremities.

CO5: To be able to demonstrate the movements of various joints.

CO6: Distinguish major arteries, veins & Lymphatic's with special emphases to extremities.

Course Content:

Topics	Hours
Unit 1: General Anatomy	9
Introduction to Anatomy, terms and terminology , Regions of Body, cavities and Systems outline , Cell Structure and function of cell organelles (Brief outline only) , Connective tissue & its modification, tendons, membranes, Special connective tissue, Bone structure - Structure, blood supply, growth, ossification, Muscle: Classification, structure Nerve: Structure, classification, Neurons.	
Unit 2: Joints, Circulatory and Lymphoid System	6
Classification, structures of joints, movements, blood supply, nerve supply, applied anatomy, Circulatory system: major arteries and veins of the body, Lymphoid system: Circulation and function.	
Unit 3: Upper extremity I	18
Bony architecture**,** Joints – structure, range of movement**,** Muscles – origin, insertion, actions, nerve supply	
Unit 4: Upper extremity II	12

Major nerves – course, branches and implications of nerve injuries**,** Development of limb bones, muscles and anomalies, Radiographic identification of bone and joints.	
Unit 5: Lower Extremity I	18
Bony architecture**,** Joints – structure, range of movement, Muscles – origin, insertion, actions, nerve supply	
Unit 6: Lower Extremity II	12
Major nerves – course, branches and implications of nerve injuries, Development of limb bones, muscles and anomalies, Radiographic identification of bone and joints	

Suggested Readings:

Text Books:

1. B.D. Chaurasia, Human Anatomy- Volume 1 & 2 CBS Publishers &Distributors.
2. B.D. Chaurasia, Human Anatomy General CBS Publishers & Distributions
2. Inderbir Singh, Textbook of Anatomy with colour Atlas – Vol. 1, 2, 3. Jaypee Brothers.

Reference Books:

1. Snell, Richard S, Clinical Anatomy By Regions-, Wolters Kluwer, New Delhi.
2. Cunningham Manual of Practical Anatomy Vol. I, II, III, Churchill Livingstone.

Program: Bachelor of Physiotherapy (BPT)
Semester: First
Course: Physiology-1
Course Code: 23A102

L	T	P	Credits
5	0	0	5

COURSE LEARNING OBJECTIVE:

CLO1: To acquire the knowledge of general physiology
CLO2: To learn about blood, cardiorespiratory physiology
CLO3: To contribution of each organ system in maintenance of Homeostasis

COURSE OUTCOME

At the end of course, candidate will able to
CO1: Able to identify structure and function of cell.

CO2: Have a knowledge of blood and its components and function.

CO3: Acquire the knowledge of cardiac and respiratory systems of human body.

CO4: Knowledge of ECG and Circulatory System.

Course Content:

Topics	Hours
Unit 1: **General Physiology**	8
Structure of cell membrane, Transport across cell membrane**,** Functional morphology of the cell, Intercellular communication, Homeostasis	
Unit 2: Blood	10
W.B.C., R.B.C., Platelets formation & functions, Plasma, Blood Groups, Haemostasis, Immunity, Plasma proteins and their functions.	
Unit 3: **Cardiovascular System I**	8
Dynamics of blood & lymph flow, Anatomical, biophysical consideration of arterial, arteriolar & capillary venous level, Lymphatic circulation, Origin and spread of cardiac excitation.	
Unit 4: **Cardiovascular System II**	18
Basic idea of Electrocardiogram, Mechanical events of Cardiac cycle, Cardiac output, its regulation and factors determining it, Local & systemic regulatory mechanisms of CVS- humeral & neural, Cerebral, coronary, splanchnic, skin, Placental & Fetal circulation.	
Unit 5: Respiratory System	21
Physiological anatomy of lungs, mechanics of respiration **,** Pulmonary circulation, Gas exchange in lungs **,** Oxygen & Carbon dioxide transport, Other function of respiratory system, Neural & chemical control of breathing, Regulation of respiratory activity, non-chemical influences on respiratory activity.	
Unit 6: Cardio respiratory adjustments in health & disease	10

Exercise, high altitude, deep sea diving, Hypoxia, hypercapnia, hypocapnia, oxygen treatment, Asthma, emphysema, artificial respiration.	

Suggested Readings:

Text Books:

1. Jain, A K, Textbook of Physiology: Volume 1 & 2, Avichal.
2. Sembulingam, K, Essentials of Medical Physiology, Jaypee New Delhi.

Reference Books:

1. Ghai, Text book of Practical Physiology, Jaypee, New Delhi.
2. Guyton Arthur, Text book of Medical Physiology, Mosby.

Program: Bachelor of Physiotherapy (BPT)
Semester: First
Course: Psychology
Course Code: 23A103

L	T	P	Credits
4	0	0	4

COURSE LEARNING OBJECTIVE:

CLO1: The primary purpose of this paper is to impart basic knowledge of Psychological maturation
CLO2: To learn about Psychological Human Development & growth.
CLO3: To gain the knowledge and alterations during aging process and its importance in healthcare delivery system.

COURSE OUTCOME

At the end of course, candidate will able to

CO1: Able to define the term psychology and its importance in the health delivery system and Gain knowledge of psychological maturation during human development and growth and alteration during ageing process.

CO2: Understand the importance of psychological status of the person in the health and diseases, environmental and emotional influence on the mind and personality.

CO3: Acquire the knowledge as to how to deal with the patient. Reference should be made whenever appropriate to the therapist relationship with the patient and with his professional colleagues. Emphasis should be laid on the effects of disease on the patient's behavior.

Course Content:

Topics	Hours
Unit 1: Introduction to Psychology Definition, Fields of application of Psychology in relation to following Schools Method and Branches / Schools	12
Structuralism, functionalism, behaviorism, psychoanalysis, Methods: Introspection, observation, inventory and experimental method. Branches: General, child, social, abnormal, industrial, clinical, counseling, educational.	
Unit 2: Concepts of Psychology	15
Learning – Definition, theories and principles of learning, Learning disabilities, laws of learning, type of learning: classical conditions, operant conditioning, insight observation and trial and error type. Effective ways to learn: Massed Vs. spaced, whole vs. part, Recitation vs reading, and Accidental vs Intentional learning. Emotions - theories of emotions and stress, Emotional and behavioral disorders of childhood and adolescence, Disorders of under and over controlled behavior, Eating disorders. Democratic and Authoritarian Leadership: Qualities of leadership, Define attitude & Change of attitude, Defense Mechanisms of the Ego.	
Unit 3: Health Psychology	9

Psychological reactions of a patient: Psychological reactions of a patient during admission and treatment anxiety, shock denial, suspicion, questioning, loneliness, regression, shame, guilt, rejection, fear withdrawal, depression, egocentricity, concern about small matters, narrowed interests, emotional over reactions, perpetual changes, confusion disorientation, hallucination, delusion, illusions anger, hostility, loss of hope. Reaction to loss: Reactions to loss, death and bereavement shock and disbelief.	
Unit 4: Communications and Counseling: **Communications**	12
Type verbal, non-verbal, element in communication, barriers to good communication, developing, effective communication, specific communication techniques. Counseling: Definition, Aim differentiates from guidance, principles in counseling and personality qualities of counselors. Geriatric psychology: Specific psychological reactions and needs of geriatric patients. Pediatric psychology: Specific psychological reactions and needs of pediatric patients.	
Unit 5: Clinical Psychology & Mental Disorders	7
Definition, sign & synapsing types of psychosomatic complications (Mental retardation, Autistic behavior, Learning disabilities.) Psychosis: schizophrenia, delusional disorders, acute and transient psychotic Disorders. Affective disorders: depression disorders, mania, bipolar affective disorders. Anxiety disorders: agoraphobia, panic disorder, generalized anxiety disorders	
Unit 6: Miscellaneous	5
Dissociative disorders, somatoform disorders, OCD .Organic conditions: dementia, delirium, traumatic. Special therapies: Psychotherapy, Group therapy, Shock therapy.	

Suggested Readings:

Text Books:

1. S K Mangal, General Psychology, Sterling Publishers.

2. Ahuja, Niraj, A Short Textbook of Psychiatry,Jaypee.

Reference Books:

1. Morgan, Clifford T, Introduction to Psychology, Mcgraw Hill

Program: Bachelor of Physiotherapy (BPT)
Semester: First
Course: Energy & Environmental Sciences
Course Code: 23A104

L	T	P	Credits
3	0	0	3

COURSE LEARNING OBJECTIVE:

CLO1: To learn about the basic principles of environmental sciences
CLO2: To makes the students ready for the upcoming problems the planet earth is facing and going to face in future.
CLO3: At the end of the course the student will have basic knowledge on natural resources, pollution, ecosystem, biodiversity.

COURSE OUTCOME:

At the end of course, candidate will able to

CO1: Will be able to critically examine all sides of environmental issues. To opinions about how to interact with the environment on both a personal and a social level.

CO2: An Environmental Studies major will be able to recognize the physical, chemical, and biological components of the earth's systems and show how they function.

CO3: To allow students to develop a better sense of not only individual organisms, but of the systems in which these organisms live. Students will also see how natural systems and human-designed systems work together, as well as in conflict with each other.

CO4: Able to do independent research on human interactions with the environment without destroying it.

Course Content:

Suggested Readings:

Text Books:

1. Agarwal, K.C.2001 Environmental Biology, Nidhi Publications Ltd. Bikaner
2. Clark R.S.Marine Pollution, Clanderson Press Oxford
3. Miller T G.Jr Environmental Science, Wadsworth Publishing Co

Reference Books:

1. Odum, EP.1971 Fundamentals of Ecology. W B Saunders Co.
2. Townsend C, Harper J and Michael Begon, Essentials of ecology, Blackwell Science.

Topics	Hours
Unit 1: The Multidisciplinary nature of environmental studies	
Definition, scope and importance, Need for public awareness. Renewable and non-renewable resources: Natural resources and associated problems. Forest resources: Use and over- exploitation, deforestation. Water resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams – benefits and problems. Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources, case studies. Food resources: World food problems, fertilizer-pesticide problems, water logging, salinity, case studies. Energy resources: Growing energy needs, renewable and nonrenewable energy sources, use of alternate energy sources. Case studies. Land resources: Land as a resource, land degradation, man induced landslides, soil erosion and desertification. Role of an individual in conservation of natural resources. Equitable use of resources for sustainable lifestyles.	12
Unit 2: Ecosystems	
Concept of an ecosystem, Structure and function of an ecosystem. Procedures, consumers and decomposers. Energy flow in the ecosystem. Ecological succession. Food chains, food webs and ecological pyramids. Introduction, types, characteristic features, structure and function of the following ecosystem:-Forest ecosystem, Grassland ecosystem, Desert ecosystem, Energy flow in the ecosystem, Aquatic ecosystem (ponds, streams, lakes, rivers, oceans, estuaries).	7
Unit 3: Biodiversity and its conservation	
Introduction- Definition: genetic, species and ecosystem diversity. Biogeographical classification of India. Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values. Biodiversity at global, national and local levels. India as a mega-diversity nation. Hot-spots of biodiversity. Threats to biodiversity: Habitat loss, poaching of wildlife, man-wildlife conflicts. Endangered and endemic species of India. Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity.	6
Unit 4: Environmental Pollution Definition, Causes, effects and control measures	
Air pollution**,** Water pollution**,** Soil pollution**,** Marine pollution**,** Noise pollution**,** Thermal pollution**,** Nuclear hazards**,** Solid waste Management: Causes, effects and control measures of urban and industrial wastes. Role of an individual in prevention of pollution. Pollution case studies. Disaster management: floods, earthquake, cyclone and landslides.	6
Unit 5: Social Issues and the Environment	
From unsustainable to sustainable development. Urban problems related to energy. Water conservation, rain water harvesting, watershed management. Resettlement and rehabilitation of people: its problems and concerns. Case studies. Environmental ethics; Issues and possible solutions. Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Case studies. Wasteland reclamation. Consumerism and waste products. Environment Protection Act. Air (Prevention and Control of Pollution) Act. Water (Prevention and control of Pollution) Act. Wildlife Protection Act. Forest Conservation Act. Issues involved in enforcement of environmental legislation, Public awareness.	7
Unit 6: Human Population and the Environment	7

L	T	P	Credits
2	0	0	2

Program: Bachelor of Physiotherapy (BPT)

Semester: First

Course: Communications Skills

Course Code: 40BPT.104

Population growth, variation among nations. Population explosion- Family Welfare Program, Environment and human health. Human rights. Value Education. HIV/AIDS. Women and Child welfare. Role of information technology in environment and human health. Case studies. Environmental assets river/ forest/ grassland/ hill/ mountain. Local polluted site- Urban/ Rural/ Industrial/ Agricultural, Study of common plants, insects, birds. Study of simple ecosystems-pond, river, hill slopes, etc.	

COURSE LEARNING OBJECTIVE:

Students will be able to

CLO1: Identify common communication problems that may be holding learners back

CLO2: Identify what their non-verbal messages are communicating to others

CLO3: Learning to communicate through the digital media

CLO4: Understand the importance of empathetic listening

CLO5: Explore communication beyond language.

Course Outcome:

After the successful completion of the course, the students will be able to:

CO1: Overcoming common communication problems.

CO2: Effectively using non-verbal communication.

CO3: Effectively using digital media to communicate messages.

CO4: Becoming an empathetic listener and inculcating listening skills.

CO5: Inculcating effective communication skills.

Course Content:

Topics	Hours
Unit I: Listening	3
Techniques of effective listening Listening and comprehension Probing questions Barriers to listening	
Unit II: Speaking	5
Pronunciation Enunciation Vocabulary Fluency Common Errors	
Unit III: Reading	5
Techniques of effective reading Gathering ideas and information from a given text: Identify the main claim of the text, Identify the purpose of the text, Identify the context of the text, Identify the concepts mentioned Evaluating these ideas and information: Identify the arguments employed in the text, Identify the theories employed or assumed in the text Interpret the text: To understand what a text says, To understand what a text does, To understand what a text means	
Unit IV: Writing and different modes of writing	

Clearly state the claims, Avoid ambiguity, vagueness, unwanted generalizations and oversimplification of issues Provide background information, effectively argue the claim, provide evidence for the claims, Use examples to explain concepts, Follow convention Be properly sequenced, Use proper signposting techniques, Be well structured Well-knit logical sequence, Narrative sequence Category groupings, Different modes of Writing - E-mails, Proposal writing for Higher Studies, Recording the proceedings of meetings, Any other mode of writing relevant for learners	6
Unit V: Digital Literacy Role of Digital literacy in professional life, Trends and opportunities in using digital technology in workplace. Internet Basics, Introduction to MS Office tools Paint, Office, Excel, Power point	4
Unit VI: Effective use of social media Introduction to social media websites, Advantages of social media Ethics and etiquettes of social media, How to use Google search better Effective ways of using social media, Introduction to Digital Marketing	4
Unit VII: Non-verbal communication Meaning of non-verbal communication, Introduction to modes of non-verbal communication, Breaking the misbeliefs, Open and Closed Body language Eye Contact and Facial Expression, Hand Gestures, Do's and Don'ts Learning from experts, Activities-Based Learning	3

Bibliography &Suggested Reading including audio video material:

Books

Sen Madhucchanda (2010), *An Introduction to Critical Thinking*, Pearson, Delhi

Silvia P. J. (2007), *How to Read a Lot*, American Psychological Association, Washington D

Program: Bachelor of Physiotherapy (BPT)
Semester: First
Course: Anatomy - I Practical
Course Code: 23A101P

L	T	P	Credits
0	0	2	1

COURSE LEARNING OBJECTIVE

CLO1: To gain Knowledge about surface anatomy
CLO2: To learn about upper and lower limb anatomy
CLO3: To makes student ready for future to practice as a qualified Physiotherapist

COURSE OUTCOME

At the end of course, candidate will able to
CO1: Students would have studied about the gross morphology, structure of skeletal, muscular and nervous system of the human body.

CO2: Students would able to identify the different types of bones in human body especially upper and lower limb.

CO3: Students would be able to identify the various tissues of different systems of human body.

CO4: Student will able to various aspects of joints of upper and lower limb.

CO5: To be able to identify various bony prominence and do surface marking in human body.

CO6: To be able to identify various abnormality and deformities of bone and joint.

CO7: To be able to identify various artery, vein and lymphatic system of human body especially of upper and lower limb.

Course Content:

Topics	Hours
Unit 1: Identification and description	3
Identification and description of all anatomical structures. The study of bones, muscles, joints, nerve supply of the limbs and arteries of limbs.	
Unit 2: Demonstration	6
Demonstration only through dissected parts, slides, models, charts, etc.	
Unit 3: Demonstration of dissected parts	12
Upper Extremity and Lower Extremity	
Unit 4: Demonstration of skeleton	9
Articulated and Disarticulated	

Program: Bachelor of Physiotherapy (BPT)
Semester: First
Course: Physiology – I Practical
Course Code: 23A102P

L	T	P	Credits
0	0	2	1

COURSE LEARNING OBJECTIVE

CLO1: To provide exposure to students with physiological basis of Human body for efficient healthcare delivery system.

CLO2: To gain knowledge about microscope and blood

CLO3: To makes student ready for future to practice as a qualified Physiotherapist

COURSE OUTCOME
At the end of course, candidate will able to
CO1: Student will able to identify parts of microscope and how to study slides under microscope.

CO2: Students would have studied about the gross morphology, structure and functions of cell.

CO3: They would have learnt various techniques like blood group determination, blood cells counting.

Course Content:

Topics	Hours
Unit 1: Microscope	6
Study of Microscope and its uses. Types	
Unit 2: Blood Indices	24
Determination of RBC count, Determination of WBC count, Differential leukocyte count, Estimation of hemoglobin,	

SECOND SEMESTER

Program: Bachelor of Physiotherapy (BPT)
Semester: Second
Course: Anatomy – II
Course Code: 23A201

L	T	P	Credits
5	0	0	5

COURSE LEARNING OBJECTIVE

CLO1: To learn about basic anatomy of thorax and abdomen>
CLO2: To gain knowledge about Brain and Spinal Cord.
CLO3: to give impact knowledge, so that utilize same in future practice

COURSE OUTCOME

At the end of course, candidate will able to
CO1: Describe the source & course of spinal nerve.

CO2: Identify and describe various parts of spine, thoracic and pelvic bony.

CO3: Identify and describe various organs of thoracic and abdominal content.

CO4: Describe parts of central nervous system (CNS) – Fore brain, Mid Brain and Hind Brain. Brain stem, course of cranial nerve – special emphasis on V, Vll, X, XI and Xll.

CO5: An idea of embryology and neuromuscular development.

CO6: Have knowledge of Special senses like eye, skin, ear.

CO7: Have an idea of brain circulation and knowledge of tracts.

Course Content:

Topics	Hours
Unit 1: Spine & Thorax	15
Back muscles - Superficial layer, Deep muscles of back, their origin, insertion, action and nerve supply, Vertebral column – Structure & Development, Structure & Joints of vertebra, Radiographic identification of bone and joints Thorax: Thoracic cage, Pleural cavities & pleura, Lungs and respiratory tree , Diaphragm	
Unit 2: Head and neck I	18
Cranium, Facial Muscles**,** Central nervous system – disposition, parts and functions, Cerebrum, Cerebellum, Midbrain & brain stem, Blood supply & anatomy of strokes, Spinal cord- anatomy, blood supply, nerve pathways, Pyramidal, extra pyramidal system, Thalamus, hypothalamus	
Unit 3: Head and neck II:	12

Ventricles of brain, CSF Circulation Development of nervous system & defects (Brief Description), Cranial nerves – special emphasis on V, VII, X, XI, XII (course, distribution and palsies), Sympathetic nervous system, its parts and components (Brief Description), Parasympathetic nervous system (Brief Description).	
Unit 4: Special senses, Abdomen and pelvis	12
Nerve receptors, Eye, Ear, Labyrinth, Abdomen and pelvis (Brief descriptions only): Abdominal cavity – divisions, Muscles of abdominal wall, pelvic floor, innervations, Bony Pelvis.	
Unit 5: Digestive system, Urinary system & Genital system	13
Liver & pancreas, Alimentary canal, Urinary system – Kidney, Ureter, bladder, urethra. Genital system – male and female.	
Unit 6: Endocrine System & Miscellaneous	5
Pituitary, Thyroid, parathyroid (Brief Description), Embryology in brief covering neuromuscular developmental aspects	

Suggested Readings:

Text Books:

1. B.D. Chaurasia, Human Anatomy- Volume 1, 2, 3, 4 CBS Publishers &Distributors.

2. Inderbir Singh, Textbook of Anatomy with colour Atlas – Vol. 1, 2, 3.Jaypee Brothers.

Reference Books:

1. Snell, Richard S, Clinical Anatomy By Regions-, Wolters Kluwer, New Delhi.

2. Cunningham Manual of Practical Anatomy Vol. I, II, III, Churchill Livingstone.

Program: Bachelor of Physiotherapy (BPT)
Semester: Second
Course: Physiology - II
Course Code: 23A202

L	T	P	Credits
4	0	0	4

COURSE LEARNING OBJECTIVE

CLO1: to acquire the knowledge of special senses physiology
CLO2: To learn about nervous system, Digestive system, Reproductive system, Excretory System, Endocrine physiology.
CLO3: To contribution of each organ system in maintenance of Homeostasis**.**

COURSE OUTCOME

At the end of the course, the candidate will-

CO1: Acquire the knowledge of the relative contribution of each organ system in maintenance of themilieu interior [Homeostasis].

CO2: Be able to describe physiological functions of various systems, with special reference to Neuro-motor, female uro-genital function, and alterations in function with aging.

CO3: Acquire the skill of basic clinical examination, with special emphasis to peripheral and central nervous system.

Course Content:

Topics	Hours
Unit 1: Nerve - Muscle and Synaptic & Junction Transmission:	18
Nerve – General Concept, Nerve cell – structure **,** Genesis of resting membrane potential & Action potential, Their ionic basis, All or None phenomenon, Ionic basis of nerve conduction, Classification & types of nerve fibre**,** Mixed nerves & compound action potential **,**Concept of nerve injury & Wallerian degeneration, Muscle properties and functions, Electric & Mechanical responses & their basis, Concept of isometric & isotonic muscle contraction, Electrical events in postsynaptic neurons, Inhibition & facilitation at synapses, Chemical transmission of synaptic activity, Principal neurotransmitter system, Neuromuscular junction, structure & events occurring during excitation.	
Unit 2: Digestive System & Renal System	12
Digestion & absorption of nutrients, Gastrointestinal secretions & their regulation, Liver & Exocrine Pancreas Renal System: Glomerular filtration rate, clearance, Tubular function, Water excretion, concentration of urine-regulation of Na, Cl, K excretion, Physiology of urinary bladder.	
Unit 3: Functions of Nervous system (descriptive	18

Reflexes, monosynaptic, polysynaptic, withdrawal reflex, Properties of reflexes **,** Sense organ, receptors, electrical & chemical events in receptors, Ionic basis of excitation, 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 & clinical aspects, Autonomic nervous system & Hypothalamus, Higher functions of nervous system : Learning & memory, neocortex, Limbic functions, sexual behaviour, fear & range, motivation.	
Unit 4: Miscellaneous	12
Special senses, Endocrinology, Male & female reproductive system.	

Suggested Readings:

Text Books:

1. Jain, A K, Textbook of Physiology: Volume 1 & 2, Avichal

2. Sembulingam, K, Essentials of Medical Physiology, Jaypee New Delhi

Reference Books:

1. Ghai, Text book of Practical Physiology, Jaypee, New Delhi.

2. Guyton Arthur, Text book of Medical Physiology, Mosby

Program: Bachelor of Physiotherapy (BPT)
Semester: Second
Course: Sociology
Course Code: 23A203

L	T	P	Credits
4	0	0	4

COURSE LEARNING OBJECTIVE

CLO1: This course will enable the student to understand specific sociological factors and effects in physical illness

CLO2: Student will learn about Sociological factors and effects in physical illness.

CLO3: this will help them to have a holistic approach in their dealings with patients during admission, treatment, rehabilitation and discharge.

COURSE OUTCOME
At the end of course, candidate will able to
CO1: Identify and apply sociological concepts and theories to understand social phenomena

CO2: Critically evaluate explanations human behavior, social phenomena and social processes locally and globally.

CO3: Apply social scientific principles to understand the social world.

CO4: Evaluate the quality of social scientific data.

CO5: Communicate in a clear and coherent manner in both written and oral communication.

CO6: Use sociological knowledge to inform public understanding and policy database.

Course Content:

Topics	Hours
Unit 1: Introduction and Social Factors in Health and Disease	12
1. Meaning-Definition and scope of Sociology 2. Its relation with Anthropology, Psychology, Social Psychology and Ethics. 3. Methods of Sociology-case study, Social Survey, Questionnaire, and Interview and opinion poll methods. 4. Importance of its study with special reference to health care professionals. Social Factors in Health and Disease: 1. The meaning of Social Factors. 2. The role of social factors and illness.	
Unit 2: Socialization	8
1. Meaning and nature of Socialization. 2. Primary, Secondary, and Anticipatory Socialization. 3. Agencies of Socialization. Social Groups: 1. Concepts of social groups. 2. Influence of formal and informal groups on health and sickness. 3. The roll of primary groups and secondary groups in the hospital and rehabilitation settings.	
Unit 3: Family and Community	9

1. The family - Meaning and definition, Functions 2. Changing family Patterns 3. Influence of family on the individual health, family, and nutrition. 4. The effects of sickness on family and psychosomatic disease and their importance to Physiotherapy Community: 1. Rural Community – Meaning and features – Health hazards of rural population 2. Urban community – Meaning and features – Health hazards of urban population	
Unit 4: Culture and Health, Social change	10
1. Concept of culture 2. Cultures and Behavior 3. Cultural meaning of sickness. Culture and health disorders Social change: 1. Meaning of social changes & Factors of social change. 2. Human adaptation and social change. 3. Social change and stress. 4. Social and deviance. 5. Social change and health Program. 6. The role of social planning in the improvement of health and in rehabilitation	
Unit 5: Social problems of disabled	15
Consequences of the following social problems in relation to sickness and Disability, remedies to prevent these problems 1. Population explosion. 2. Poverty and unemployment. 3. Beggary. 4. Juvenile delinquency. 5. Prostitution. 6. Alcoholism. 7. Problems of women in employment.	
Unit 6: Social security and Social Worker	6
Social security and social legislation in relation to the Disabled. Social worker: Meaning of social work; the role of a medical social worker.	

Suggested Readings:

Text Books:

1. Bhusan, Vidya and Sachdeva, D.R.; Introduction to Sociology Kitab Mahal, New Delhi

References Books:

1. Anand Kumar Indian Society and Culture Vivek, New Delhi.
2. Turner, J. H.; Structure of Sociological Theory, Jaipur Publication.

Program: Bachelor of Physiotherapy (BPT)
Semester: Second
Course: Fundamentals of Biomechanics & Exercise Therapy
Course Code: 23A204

L	T	P	Credits
4	0	0	4

COURSE LEARNING OBJECTIVE

CLO1: The primary purpose of this paper is to describe basic biomechanics related to exercise therapy

CLO2: to make student aware of different model and category of patients

CLO3: Student will acquire the skill of use of various concepts & techniques related to the core of physiotherapy

COURSE OUTCOME

At the end of course, candidate will able to
CO1: Define various terms used in biomechanics and exercise therapy.

CO2: Have knowledge of basic principles of Physics related to mechanics of movement/ motion & able to understand the application of such principles to the simple equipment designs and their efficacy in therapeutic gymnasium and various starting positions used in therapeutics.

CO3: To able to describe and also acquire the skill of use of various tools of the therapeutics gymnasium.

CO4: To demonstrate passive movements in terms of various anatomical planes.

CO5: To demonstrate various starting and derived positions.

CO6: Acquire the skill of application of various massage manipulation and able to describe the physiological effects, therapeutically use merits /demerits of the same.

CO7: Acquire the skill of assessment of sensations, superficial and deep reflexes.

CO8: To able describe different types of goniometer, merits and demerits of it. Acquire the skills measure of ROM of different joints.

CO9: Will have a knowledge of limb length measurement, girth measurement.

Course Content:

Topics	Hours
Unit 1: **Introduction to exercise therapy**	9

Mechanical principle applied in human body- gravity, center of gravity, line of gravity, base of support, equilibrium, axis and planes Machines: Levers- Definition, function, classification and application of levers in Physiotherapy & order of levers with example of lever in human body.	
Unit 2: Pulley, Springs, Elasticity, Biomechanical Modalities	9
System of pulleys, types and application. Springs- Properties of springs, springs in parallel and series, elastic materials in us. Elasticity- Definition, stress, strain, Hooke's law. Biomechanical Modalities: Aims and scope of various - shoulder wheel, shoulder ladder, shoulder pulleys, pronator supinator instrument, static cycle, ankle exerciser, balancing board, springs, weights.	
Unit 3: Disability Models and Passive movements in exercise therapy	9
ICIDH model of disability, Nagi model of disability, ICF model Passive movements in exercise therapy: Definition, classification, indications, contra indications, advantages, limitations, techniques - emphasize PROM to upper, lower, neck and trunk muscles.	
Unit 4: Active movements in exercise therapy	9
Definition, classification, indications, contra indications, advantages, limitations, techniques - emphasize active movements to upper, lower, and neck and trunk muscles.	
Unit 5: Concepts in exercise therapy I: Starting positions, Relaxation and Balance	12
Starting positions – Muscle work, effect and uses and derived positions, Relaxation – Definition, types of relaxation, relaxation techniques, Suspension – Definition, types, uses and therapeutic applications. Balance – Static and dynamic balance, mechanism of balance control, balancing exercises.	
Unit 6: Concepts in exercise therapy - II: Joint range measurement, Limb length & Girth, Soft tissue manipulation (Massage)	12
Joint range measurement – Goniometer, types and techniques of measuring joint ROM. IV Limb length & Girth: Measurement, its importance in physiotherapy Soft tissue manipulation (Massage): History, types, techniques, physiological effects, therapeutic uses, contraindications of therapeutic massage.	

Suggested Readings:

Text Books:

1. Gardiner, M Dena, The principles of exercise therapy, CBS Publishers.
2. Norkin, Cynthia C & White, D Joyce Measurement of joint motion: A Guide To Goniometry, Jaypee, New Delhi.

Reference Books:

1. Narayanan, S Lakshmi, Textbook of Therapeutic Exercises, Jaypee New Delhi.
2. Kisner, Carolyn, Colby, Lynn Allen and borstad, John Therapeutic exercise: Foundations and Techniques, Jaypee New Delhi.

Program: Bachelor of Physiotherapy (BPT)
Semester: Second
Course: Biochemistry
Course Code: 23A205

L	T	P	Credits
4	0	0	4

COURSE LEARNING OBJECTIVE

CLO1: The primary purpose of this paper is to impart basic knowledge and understanding of the biochemical changes in human body
CLO2: To learn about interpretation of common biochemistry investigations related to different organs of human body.
CLO3: To give knowledge about different enzyme, Carbohydrate, Protein, Fat, minerals and vitamins

COURSE OUTCOME

At the end of the course, the candidate will

CO1: Be able to describe structures & functions of cell in brief.

CO2: Be able to describe normal functions of different components of food, enzymes.

CO3: Define Basal Metabolic Rate & factors affecting the same [in brief], with special reference to obesity.

CO4: Be able to discuss nutritional aspects of carbohydrates, lipids, proteins & vitamins & their metabolism with special reference to obesity.

CO5: Define enzymes; discuss in brief, factors affecting enzyme activity.

CO7: Describe in details biochemical aspects of muscle contraction.

CO8: Acquire knowledge in brief about the Clinical biochemistry, with special reference to
Liver & renal function test, Blood study for Lipid profile, metabolism of fat, Carbohydrates, proteins, bone minerals, and electrolyte balance.

Course Content:

Topics	Hours
Unit 3: **Basis of Biochemistry, Tissue Chemistry, Nutrition**	15
Cell & Sub cellular organelles :Structure & function , Biochemical characteristics of living matter, Physiochemical Phenomena & their significance (Osmosis Diffusion, Donnan Membrane equilibrium), Structure organization of plasma membrane & transport systems. Tissue Chemistry: Chemistry of connective tissue, bone and teeth. Composition function and chemical mediators of nerve structure of muscle tissue. General Biochemistry of muscle contraction and relaxation. Nutrition: Basic principles of nutrition; Carbohydrates, Proteins and Lipid caloric requirement and balance diet.	

Unit 4: Biological Macromolecules-I: Carbohydrates, Biological Macromolecules-II: Lipids, Biological Macromolecules-III: Proteins	
Carbohydrates: Definition, classification with examples and general functions. Metabolism – Glycolysis, T.C.A Glycogen metabolism, Blood Sugar regulation, Diabetes and diabetic keto-acidosis. Lipids: Definition, classifications and general functions. Essential fatty acids, cholesterol, Blood, Brief review of lipoproteins. Metabolism- Oxidation of fatty acids, cholesterol synthesis, and fatty liver. Biological Macromolecules-II: Proteins: Definition, classification, and Bio-medical Importance. Nucleic acid - Definition of DNA, structure of DNA, Watson & Crick model of DNA, Types of RNA. Synthesis & catabolism of purines & pyrimidines gout, Nucleosides, Nucleotides & Biologically important nucleotides, Replication, Transcription, Translation & inhibitors of protein synthesis.	15
Unit 5: Plasma Proteins, Nutrition & Dietetics, Essentials of Biochemistry: Enzymes	
Functions, Metabolism, General reactions of amino acids. Formation and fate of ammonia - Urea cycle. Study of hemoglobin and immunoglobulins with functions. Nutrition & Dietetics: .Proximate principles of food & their physiological importance, Caloric requirements & Computation of diet, Balance diet, BMR & factors affecting BMR, SDA & its significance, RQ, Nitrogen balance, Malnutrition (Kwashiorkor & Marasmus), Obesity, diet in health & disease, Role of dietary fiber, Metabolism in exercise. Essentials of Biochemistry: Enzymes: Definition, classification with examples. Factors affecting enzyme action. Brief study of enzyme inhibition. Clinical importance of enzymes	15
Unit 6: Vitamins, Water and Electrolyte Balance, Biochemical Endocrinology & Interpretations, Biochemical Endocrinology & Interpretations	
Vitamins: Definition, classification and functions. Dietary source, Daily requirement and deficiency disorders. Water and Electrolyte Balance: Concepts of buffers, Ph & Body buffers, General outline of fluid compartments of the body with their water and electrolyte content and balance, Dehydration. Biochemical Endocrinology & Interpretations: General characteristics & Classification of hormones, Mechanism of action and metabolic effects of hormone of Pituitary, Biochemical Endocrinology & Interpretations: Thyroid, Parathyroid and Adrenal & Pancreas. Interpretation of common clinical biochemistry investigations: Sugar, Urea, Creatinine, Protein, Bilirubin, Uric acid, Cholesterol.	15

Suggested Readings:

Text Books:

1. VK Malhotra, Biochemistry for Students, Jaypee, New Delhi.

Reference Books:

1. Vasudeval D.M, Textbook of Biochemistry for Medical Students, Jaypee Brothers.
2. Chatterjee M.N, Textbook of Biochemistry, Jaypee Brothers.

Program: Bachelor of Physiotherapy (BPT)
Semester: Second
Course: Character Building and Holistic Development of Personality I (Spiritual & Mental Health)
Course Code: 23AVAC101

L	T	P	Credits
2	0	0	2

COURSE LEARNING OBJECTIVE:

CLO1: To prepare the student to develop Manomaya Kosha (Development of mind).
CLO2: To enable the students to develop Vijnanamaya Kosha (Intellectual Development).

CLO3: To develop an understanding of Anandamaya Kosha **(**Spiritual Development).
CLO4: To help the students in understanding the virtue of Vasudhaiva-Kutumbakam (the whole world is one family) and also to transform students into ideal personalities by inculcating sanskaaras.

COURSE OUTCOME:

On completion of the Course, the students will be able to:

CO1: Develop a good understanding of Manomaya Kosha.
CO2: Adapt the concept of constructive roles.
CO3: Analyze the understanding of spiritual development.
CO4: Correlate the importance of world as a family and enable them to develop Manomaya Kosha, Vijnanamaya Kosha**,** Anandmaya Kosha.

Course Content:

Suggested Reading:

- My Idea of Education, Swami Vivekanand, Advaita Ashram, Kolkata
- Rabindranath Tagore : An Interpretation, Sabyasachi Bhattacharya, Penguin Delhi
- Women Who Created History, NCERT, New Delhi

Program: Bachelor of Physiotherapy (BPT)
Semester: Second
Course: Anatomy - II Practical
Course Code: 23A201P

L	T	P	Credits
0	0	2	1

COURSE LEARNING OBJECTIVE

CLO1: To gain Knowledge about surface anatomy
CLO2: To learn palpation of different anatomical structure.
CLO3: To makes student ready for future to practice as a qualified Physiotherapist,

Topics	Hours
Unit I: Cognitive Intellectual Development (Manomaya Kosha)	5
Character Building : Meaning, Concept, Constituent elements of character and means/ways of character building. Manomaya Kosha : General Introduction, Meaning and Concept. Manomaya Kosha : Objectives, Characteristics and Significance. Benefits of developed Manomaya Kosha and deficiencies due to underdeveloped Manomaya Kosha. Means, Activities and Programmes to develop Manomaya Kosha.	
Unit II: Cognitive Intellectual Development (Vijnanamaya Kosha)	5
• Vijnanamaya Kosha : General Introduction, Meaning and Concept. • Objectives, Characteristics and Significance. • Benefits of developed Vijnanamaya Kosha and deficiencies due to underdeveloped Vijnanamaya Kosha. • Means, Activities and Programmes to develop Vijnanamaya Kosha.	
Unit III: Cognitive Intellectual Development (Anandamaya Kosha)	10
• Anandamaya Kosha : General Introduction, Meaning and Concept. • Objectives, Characteristics and Significance. • Benefits of developed Anandamaya Kosha and deficiencies due to underdeveloped Anandamaya Kosha. • Means, Activities and Programmes to develop Anandamaya Kosha.	
Unit IV: Moral Spiritual Development (To draw inspiration from important events of the lives of great men of India to serve the society and nation).	10
• **Social and National Awakening** : Chanakya, Birsa Munda, Lala Lajpat Rai, Jyotiba Phule, Adi Shankaracharya, Veer Savarkar, • **Women from other countries dedicated to India** : Annie Besant, Emily Shankle Bose, Mary Reed. • **Leading Scientists:** Acharya Sushruta, Acharya Charak, Aryabhatta, Jagdish Chandra Basu, Homi Jahangir Bhabha, A.P.J Abdul Kalam • **Women's Awakening :** Lakshmi Bai, Rani Durgavati, Rani Chenamma, Rani Ahilya Bai Holkar • **Those who sacrificed all:** Bhagat Singh, Khudiram Bose, Chandrashekhar Azad, Mahatma Gandhi. • **Seekers of Self-reliant India**: Vinoba Bhave, Jai Prakash Narayan, Verghese Kurian, M.S.Swaminathan. • **Unique Personality of India** : Dr.Rajendra Prasad, Sardar Ballabh Bhai Patel.	

COURSE OUTCOME

At the end of course, candidate will able to

CO1: Localize various surface land-marks in spine, pelvis, skull and thorax and abdomen

CO2: Identify bone like pelvis, face, skull, spine, ribs and sternum

CO3: Identify various organs of abdomen, chest and brain.

Course Content:

Topics	Hours
Unit 1: Surface Anatomy	9
Surface land mark-bony, muscular and ligamentous -surface anatomy of major nerves, arteries of the limbs.	
Unit 2: Palpation	6
Points of palpation of nerves and arteries.	
Unit 3: Demonstration of dissection parts	15
Demonstration of dissected parts (spine, thoracic & abdominal viscera, face and brain).	

Program: Bachelor of Physiotherapy (BPT)
Semester: Second
Course: Physiology – II Practical
Course Code: 23A202P

L	T	P	Credits
0	0	2	1

COURSE LEARNING OBJECTIVE

CLO1: to learn cranial nerve examination process.

CLO2: To learn process of auscultation and blood pressure measurement

CLO3: To learn about palpation and observation and study heart rate, respiratory rate etc.

COURSE OUTCOME

At the end of course, candidate will able to

CO1: Able to examine cranial nerves individually.

CO2: Have a knowledge of ECG.

CO3: Able to examine Heart rate, Pulse rate, Blood Pressure, Respiratory rate.

CO4: Have knowledge of stethoscope, BP machine and other examination tools.

Course Content:

Topics	Hours
Unit 1: Electrodiagnosis	5
Electrocardiogram and Electrocardiograph	
Unit 2: Nerve Examination	12
Sensory and Cranial nerve Examination	
Unit 3: Motor Examination	8
Superficial Reflex, Deep Reflex, Tone, Movement	
Unit 4: Cardiovascular and Respiratory Examination	5
Pulse rate, respiratory rate, heart rate, Auscultation, measurement of Blood Pressure	

L	T	P	Credits
0	0	2	1

Program: Bachelor of Physiotherapy (BPT)
Semester: Second
Course: Fundamentals of Biomechanics Exercise Therapy Practical
Course Code: 23A204P

COURSE LEARNING OBJECTIVE –

CLO 1: To acquire skills & techniques used for exercise prescription in physiotherapy setting.
CLO 2: To learn different position used for treatment and relaxation
CLO 3: To acquire skills of massage for therapeutic purpose

COURSE OUTCOME
At the end of the course candidate will able to
CO1: Demonstrate Starting positions and derived positions.

CO2: Measure Range of motion (PROM, AROM, and AAROM) exercises to all joints using goniometer.

CO3: Demonstrate Relaxation techniques of different muscles.

CO4: Apply Suspension therapy to all major joints.

CO5: Apply skillful technique of Massage (Soft Tissue Manipulation) – upper limb, lower limb, back, face.

Course Content:

Topics	Hours
Unit 1: Position	3
Starting positions and derived positions	
Unit 2: Range of Motion	6
Range of motion (PROM, AROM, and AAROM) exercises to all joints.	
Unit 3: Goniometer	9
Measurement of joint range using goniometer	
Unit 4: Relaxation	
General and local Relaxation techniques	3
Unit 5: Suspension Therapy	
Suspension exercise to all major joints	6
Unit 6: Massage	
Massage – upper limb, lower limb, back, face	3

THIRD SEMESTER

Program: Bachelor of Physiotherapy (BPT)
Semester: Third
Course: Pathology & Microbiology
Course Code: 23A301

L	T	P	Credits
4	0	0	4

COURSE LEARNING OBJECIVE:

CLO 1: To acquire the knowledge of concepts of cell injury and changes produced in different tissue

CLO 2: To give the generalize idea about pathological changes in different system in human body

CLO 3: To learn about immunology and hematological disease.

COURSE OUTCOME

At the end the course, the candidate will able to

CO 1: Understand the basics to general pathology and abnormal pathology of hematology and lymphoreticular tissues.
CO 2: Understand and analyzing the systemic pathology to various system in human body.
CO 3: Understand general microbiology, taxonomy, morphology and physiology and learning methods of identification of bacteria, laboratory diagnosis of infection, sterilization and disinfection.
CO 4: Understand and remembering the matters of bacteriology and virology.
CO 5: Understand and analyzing the clinical and applied pathology & microbiology to various relevant diseases and infections.

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Course Content:

Topics	Hours
UNIT 1: Basics of Pathology and Oncology	10
Inflammation, injury and repair. Oncology: Classification, gross pathological state, cancer pain syndrome (Brief description) Skin: Etio-pathogenesis, gross pathology of commonly occurring skin Diseases, Burns, Pressure ulcers (Brief description).	
UNIT 2: Cardiovascular system and Haematology	18
pathogenesis, gross pathology of conditions- aging, IHD, MI, CCF, HT, RHD, Congenital heart Etio disease, Arteriosclerosis, Thrombo-angitis, Vasomotor-Raynaud's, venous thrombosis, Gangrene, Lymph edema. Haematology: (Brief description) – Etio-pathogenesis, gross pathology of conditions anaemia, polycythaemia, leukaemia, haemolytic disease, and haemophilia.	
UNIT 3: Respiratory system and Musculoskeletal System	12

Respiratory system: Etio-pathogenesis, gross pathology of conditions - aging, Pneumonia, Pulmonary TB, Bronchiectasis, COPD, Bronchial Asthma, Restrictive Lung disease, Occupational lung disease. Musculoskeletal system: Etio-pathogenesis, gross pathology of conditions - Osteomalacia, Osteoporosis, Osteomyelitis, Osteoarthritis, rheumatoid arthritis, Gout, spondyloarthropathy, Osteonecrosis, Myofascial pain syndrome. Biological responses to trauma, bone and soft tissue immobilization	
UNIT 4:CNS AND PNS	9
CNS AND PNS: Etio-pathogenesis, gross pathology of conditions - Aging, Meningitis, Encephalitis, Parkinson's, Amyotrophic lateral sclerosis, Ataxias, Multiple Sclerosis,, Neuropathies (Carcoat Marie Tooth's disease, Compression and entrapments, diabetic, G.B syndrome), Poliomyelitis and post-polio syndrome, Myasthenia Gravis.	
UNIT 5: Microbiology-I	6
Immunology: Brief description of immune system, immunity, immune responses & immune deficiency Immunology, Hypersensitivity disorders. Infectious diseases: Brief description of classification of microorganisms, identification. Sterilization and disinfections with special reference to principles of antisepsis and prevention of communicable diseases in clinical practice.	
UNIT 6: Microbiology-II	5
Brief description of identification of infectious diseases; principles of prevention of infectious diseases caused by common pathogens - streptococci, staphylococci, gonococci, Meningococci, salmonella, V. cholerae, E. coli, shigella, tetanus, Diphtheria, M. leprae, M. tuberculosis, Poliomyelitis, Rabies, Malaria, Amoebiasis, Helminthiasis, Scabies, ringworm, candidiasis.	

Suggested Readings:

Text Books:

1. Harsh Mohan, Textbook of Pathology, Jaypee Brothers.

2. Bhatia & Lal, Essential of Medical Microbiology, Jaypee Brothers.

Reference Books:

1. Vasanthi Kainathan, Concise Book on Pathology, Jaypee, New Delhi.

Program: Bachelor of Physiotherapy (BPT)
Semester: Third
Course: Biomechanics -1
Course Code: 23A302

L	T	P	Credits
3	0	0	3

COURSE LEARNING OBJECIVE:

CLO 1: The primary purpose of this paper is understanding basic biomechanics of human body

CLO 2: To learn about muscle contraction and relaxation

CLO 3: To gain knowledge about posture and ergonomics and its correction.

COURSE OUTCOME
At the end of the course, candidate will able to
CO 1: Explain the fundamental principles of mechanics.
CO 2: Describe the structural and functional properties of human joint and muscles and their response to injuries & diseases.
CO 3: Apply mechanical principles to analyze human movement, joint function and muscle action.
CO 4: Establish factors influencing posture & postural imbalance in static and dynamic position

Course Content:

Topics	Hours
UNIT 1: **Mechanics**	15
Introduction to mechanics including motion, forces, parallel forces system vectors. Newton's Law of motion, concurrent force system-composition forces, Center of Gravity, line of gravity, stability and equilibrium, law of inertia. Levers, torque, mechanical advantage. Moment arm and anatomic pulleys.	
UNIT 2 Joint Structure and Function	10
Basic principles of joint design and a human joint, Tissues present in human joint including dense fibrous tissue, bone, cartilage and connective tissue, Classification of joints, Joint function, Kinematics chains and range of motion. General effects of injury and disease.	
UNIT 3: Muscle Structure and Function	15
Mobility and stability functions of muscle, Elements of muscles structure and its properties, Factors affecting muscle tension. Types of muscle, contraction and muscles work, Classification of muscles and their functions, Group action of muscles, coordinated movement.	
UNIT 4: Posture	5
Definition, factors responsible for posture, relationship of gravity on posture Postural imbalance: Factors responsible for imbalance in static and dynamic positions including ergonomics.	

Suggested Readings:

Text Books:

1. – Norkin & Levange, Joint Structure and Function-A comprehensive Analysis, F.A Davis.

2. Norkins & White, Measurement of joint motion-A guide to goiniometry, F.A Davis.

Reference Books:

1. Smith, Brunnstrom's clinical kinesiology, F.A Davis.

Program: Bachelor of Physiotherapy (BPT)
Semester: Third
Course: Advanced Exercise Therapy -1
Course Code: 23A303

L	T	P	Credits
4	0	0	4

COURSE LEARNING OBJECIVE:

CLO 1: The purpose of this paper is to impart knowledge about advanced therapeutic equipment and various hands-on techniques.

CLO 2: Understanding of the skill of use of advanced concepts & techniques like stretching, PNF, Resistance Exercise

CLO 3: To makes student ready for future to practice as a qualified Physiotherapist.

COURSE OUTCOME

At the end of the course, candidate will able to

CO 1: Understand and explain about the operating procedure of various therapeutic equipment for different therapeutic benefits.

CO 2: Understand basic principles, indications, contraindication and precautions of various hands on techniques of stretching, resisted exercise and PNF.

CO 3: Assess muscle strength and apply different resisted exercises program.

CO 4: Demonstrate stretching technique, PNF pattern and various yogic asanas.

Course Content:

Topics	Hours
UNIT 1: Therapeutic Gymnasium and Yoga	9
Set-up of gymnasium & its importance**,** Various equipment in the gymnasium**,** Operational skills, effects & uses of each equipment**,** Posture: Normal Postural Control, Postural Alignment, Postural Stability, Postural Impairment and Mal-Alignment, Postural Training. Yoga: History, Introduction, Classification, Various Asanas.	
UNIT 2: Stretching	6
Definition, properties of soft tissue, mechanical and neurophysiological properties of connective tissue, mechanical properties of non-contractile tissue. Determinants, type and effect of stretching, precautions, general applications of stretching technique.	
UNIT 3: Resisted exercise	12
Definition – Strength, power, endurance. Guiding principle of resisted exercise, determinants, types Manual and Mechanical Resistance Exercise, Isometric Exercise, Dynamic Exercise - Concentric and Eccentric, Dynamic Exercise - Constant and Variable Resistance.	
Unit 4:	7
Isokinetic Exercise, Open-Chain and Closed- Chain Exercise, precautions, contraindications**.** Progressive Resistance Exercise - de Lormes, Oxford, MacQueen,Circuit Weight Training, Plyometric Training—Stretch-Shortening Drills, Isokinetic Regimens.	
UNIT 5: Proprioceptive Neuromuscular Facilitation	14

Principles, Diagonal patterns of movements, Basic procedures, Upper Extremity Diagonal patterns, Lower Extremity Diagonal Patterns. Technique in PNF – Rhythmic Initiation, Repeated Contractions, Reversal of Antagonists, Alternating Isometrics, Rhythmic Stabilization.	
UNIT 6: Manual Muscle Testing	12
Principles, types, grading, benefits, precaution, limitation**.**	

Suggested Readings:

Text Books:

1. Kisner & Colby, Therapeutic Exercises Foundations and Techniques, F A Davis.

2. Gardiner, Principle of Exercise Therapy, C.B.S Delhi.

Reference Books:

1. Vos et al, Propoceptive Neuromuscular Facilitation, Williams & Wilkins.

2. Hollis, Practical Exercise Therpy, Blackwell Scientific Publications.

Program: Bachelor of Physiotherapy (BPT)
Semester: Third
Course: Principles of Bioelectrical Modalities – 1
Course Code: 23A304

L	T	P	Credits
4	0	0	4

COURSE LEARNING OBJECIVE:

CLO 1: The primary purpose of this paper is to recall the basic physics principles

CLO 2: To impart basic knowledge and understanding of certain common electrical components

CLO 3: To acquire the skill of application of agents of electrotherapy.

COURSE OUTCOME

At the end of the course, candidate will able to

CO 1: Understand the fundamental concepts and applications of physics and basic electrical components.

CO 2: Understand the concepts, principles and applications of bioelectrical modalities.

CO3: Describe principles, techniques, effects, indications, contraindications and dosage parameter for low frequency currents and medium frequency currents.

Course Content:

Topics	Hours
UNIT 1: **Fundamentals of Electricity & Magnetism-I**	9
DC Currents -Modern concept of electricity: fundamental electric charges (proton and electron), bound and free electrons, free electrons and current, static electric charge, charging of an object potential and capacitance, potential difference and EMF. A. C. currents: Sinusoidal wave from, frequency, wavelength, Amplitude and phase of a sine wave, Average & RMS value of a sine wave.	
UNIT 2: **Quantity of electricity**	8
Magnitude of current, conductors and insulators, resistance of conductor and Ohm's law, resistances in series and parallel. Capacitors: Electric field around a capacitor, charging and discharging a capacitor, types of capacitor with application of each in Physiotherapy department. Rheostat: series and shunt Rheostat with application of each in the Physiotherapy department.	
UNIT 3: Fundamentals of Electricity & Magnetism- II:	10
Electric Current: Thermal effect, chemical effect (ionization) and magnetic effect. Electric shock, Earth shock, causes and its prevention. Magnetism: Magnetic - non-magnetic substances and their properties, properties of magnet, molecular theory, poles of magnet and its properties, magnetic lines of force and their properties, Electromagnetism, magnetic effects of electric current, Electromagnetic induction, Lenz's law, Inductor and Inductance types of inductor, reactance and impedance.	
UNIT 4: Thermionic Valves, Semiconductor Devices, Electronic Circuits, A.C. & D.C. meters	12

Thermionic emission, Diode and Triode valves and their characteristics, Construction and application of Cathode Ray Oscilloscope. Semiconductor Devices: Intrinsic and extrinsic semiconductors, advantages of diode and transistors devices. Basing of Diode and their characteristics, Light Emitting Diodes, integrated circuits. Electronic Circuits: Rectifiers & smoothing circuits, Oscillators - Sinusoidal TYPES. A.C. & D.C. meters: Functions and applications of Ammeter and volt meters, Ohm meters, Wheat stone bridge.	
UNIT 5: Introduction to Therapeutic currents	16
Low Frequency Currents: Introduction of direct, alternation & modified currents, Direct Current – Production, Physiological and therapeutic effects of constant current, anode and cathode, Galvanism, Ionization and their application in various conditions Modified Direct Current –various pulses, duration and frequency and their effect on nerve and muscle tissue. Production of interrupted and surged current and their effects, Physiological and therapeutic effects, principles of clinical application, indications, contra indications, precautions, operational skill of equipment & patient preparation. Iontophoresis–principles of clinical application, indication, contraindication, precaution, operational skill of equipment and patient preparation. Type of low frequency, pulse widths, frequencies & intensities used as TENS application, Theories of pain relief by TENS, Principle of clinical application effects & uses, indications, contraindications, precautions, operational skills of equipment & patient preparation	
UNIT 6: Introduction to Medium Frequency Current	5
Conceptual framework of medium Frequency current therapy production, biophysical effects, types, therapeutic effects, Techniques of application, indication, contraindication, precautions, operational skill and patient preparation.	

Suggested Readings:

Text Books:

1. Froster, A. and Palastanga, N, Clayton's Electrotherapy: Theory and Practice, AITBS, Delhi 1999.
2. Singh, Jagmohan, Textbook of Electrotherapy, Jaypee, New Delhi.

Reference Books:

1. Jhon, Low & Ann, Reed Butterworth Heine, Electrotherapy Explained: Principles, Oxford 2000.

Program: Bachelor of Physiotherapy (BPT)
Semester: Third
Course: Professional Skills
Course Code: 23A205

L	T	P	Credits
2	0	0	2

Course Learning Objective:

The Objectives of the course are to help students/candidates:
CLO 1: Acquire career skills and fully pursue to partake in a successful career path
CLO 2: Prepare good resume, prepare for interviews and group discussions
CLO 3: Explore desired career opportunities in the employment market in consideration of an individual SWOT.

COURSE OUTCOME
At the end of this course, the students will be able to:
CO 1: Prepare their resume in an appropriate template without grammatical and other errors and using proper syntax.
CO 2: Actively participate in group discussions towards gainful employment.
CO 3: Identify career opportunities in consideration of their own potential and aspirations.

Course Content:

Topics	Hours
UNIT 1: Resume Skills	3
i. Resume Skills: Preparation and Presentation - Introduction of resume and its importance, Difference between a CV, Resume and Bio data, and Essential components of a good resume ii. Resume skills: common errors - Common errors people generally make in preparing their resume, Prepare a good resume of her/his considering all essential components	
UNIT 2: Interview Skills	3
i. Interview Skills: Preparation and Presentation - Meaning and types of interview (F2F, telephonic, video, etc.), Dress Code, Background Research, Do's and Don'ts, Situation, Task, Approach and Response (STAR Approach) for facing an interview, Interview procedure (opening, listening skills, closure, etc.), Important questions generally asked in a job interview (open and closed ended questions) ii. Interview Skills: Simulation - Observation of exemplary interviews, Comment critically on simulated interviews iii. Interview Skills: Common Errors - Discuss the common errors generally candidates make in interview, Demonstrate an ideal interview	
UNIT 3: Group Discussion Skills	3
Meaning and methods of Group Discussion, Procedure of Group Discussion, Group Discussion- Simulation, Group Discussion - Common Errors	
UNIT 4: Exploring Career Opportunities	4

Knowing yourself – personal characteristics, Knowledge about the world of work, requirements of jobs including self-employment, Sources of career information, Preparing for a career based on their potentials and availability of opportunities	

Suggested Reading

- Foundation Skills In IT (FSIT) - Refer the websites like https://www.sscnasscom.com/ ssc-projects/capacity-building-and-development/training/fsit/ and

- Global Business Foundation Skills (GBFS) – Refer websites like https://www.sscnasscom. com/ssc-projects/capacity-building-and-development/training/gbfs/

B. Team Skills

Course Learning Objective:

CLO 1: Understand the significance of Team Skills and help them in acquiring them.

CLO 2: To help them design, develop and adapt to situations as an individual and as a team.

CLO 3: To help students understand the techniques of individual and group brain storming

COURSE OUTCOME

By the end of this course the learners/candidates will be able to:

CO 1: Use common technology messaging tools that are used in enterprises for flow of information and transition from command and control to informal communication during an online/offline team session.

CO 2: Appreciate and demonstrate Team Skills.

CO 3: Generate, share and maximize new ideas with the concept of brainstorming and the documentation of key critical ideas/thoughts articulated and action points to be implemented with timelines in a team discussion (as MOM) in identified applicable templates.

Course Content:

Topics	Hours
UNIT 1: Presentation Skills	3
Types of presentations, Internal and external presentation, Knowing the purpose, Knowing the audience, Opening and closing a presentation, Using presentation tools, Handling questions, Presentation to heterogenic group, Ways to improve presentation skills over time	
UNIT 2: Trust and Collaboration	3
Explain the importance of trust in creating a collaborative team, Agree to disagree and disagree to Agree – Spirit of Team work, Understanding fear of being judged and strategies to overcome fear	
UNIT 3: Listening as a Team Skill	3

Advantages of Effective Listening, Listening as a team member and team leader. Use of active listening strategies to encourage sharing of ideas (full and undivided attention, no interruptions, no pre think, use empathy, listen to tone and voice modulation, recapitulate points, etc.).	
UNIT 4: Brainstorming	3
Use of group and individual brainstorming techniques to promote idea generation, Learning and showcasing the principles of documentation of team session outcomes	
UNIT 5: Social and Cultural Etiquette	3
Need for etiquette (impression, image, earn respect, appreciation, etc.), Aspects of social and cultural/corporate etiquette in promoting teamwork, Importance of time, place, propriety and adaptability to diverse cultures	
UNIT 6: Internal Communication	2
Use of various channels of transmitting information including digital and physical, to team members.	

Suggested Reading

1. Monippally, Matthukutty. M. 2001. Business communication Strategies. 11th Reprint. Tata McGraw-Hill. New Delhi
2. Soft Skills Dr. K. Alex
3. Managerial Skills Dr. K. Alex

E- Resources:

Please check IT-ITeS Sector Skills Council readiness program namely Global Business Foundation.

Skills (GBFS) in website:
(https://www.sscnasscom.com/ssc-projects/capacity-building-anddevelopment/training/gbfs/)
Generic and the entrepreneurial NOS at NSQF Level 4 -7.

Program: Bachelor of Physiotherapy (BPT)
Semester: Third
Course: Biomechanics -1 Practical
Course Code: 23A302P

L	T	P	Credits
0	0	2	1

COURSE LEARNING OBJECIVE:

CLO 1: The primary purpose of this paper is to give basic concept of axis and plane and related to human body

CLO 2: To give basic idea about different force and its application in human body

CLO 3: To makes student ready for future to practice as a qualified Physiotherapist.

COURSE OUTCOME

At the end of course, candidate will able to

CO 1: Demonstrate & differentiate the various types of motion, plane and axis.

CO 2: Identify and apply concepts of gravity and equilibrium in analyzing body mechanics in static & dynamic activities.

CO 3: Apply and explain the principles of levers, pulley, elasticity and spring in relation to musculoskeletal function and Physiotherapy exercise

CO 4: Perform and interpret posture assessments.

Course Content:

Topics	Hours
Unit 1: Motion	6
Definition, types of motion, plane and axis of motion, factor determining the kind and modification of motion	
Unit 2: Force	2
Definition, diagrammatic representation of force, point of application, classification of forces, concurrent, coplanar and co-linear forces, composition and resolution of forces, angle of pulls of muscle	
Unit 3: Gravity	4
Definition, line of gravity, Centre of gravity	
Unit 4: Equilibrium	2
Supporting base, types, and equilibrium in static and dynamic state	
Unit 5: Lever	6
Definition, function, classification and application of levers in physiotherapy & order of levers with example of lever in human body	
Unit 6: Pulley	2
System of pulleys, types and application	
Unit 7: Elasticity	2
Definition, stress, strain, HOOKE'S Law	

Unit 8: Springs	2
Properties of springs, springs in series and parallel, elastic materials in use	
Unit 9: Posture	4
Dynamic and static posture, kinetic and kinematics of posture, analysis of posture, effect of age, pregnancy, occupation on posture	

Note: Student must maintain a logbook. The duly completed logbook should be submitted during practical examination.

Program: Bachelor of Physiotherapy (BPT)
Semester: Third
Course: Advanced Exercise Therapy – 1 Practical
Course Code: 23A303P

L	T	P	Credits
0	0	4	2

COURSE LEARNING OBJECTIVE:

CLO1: To acquire the skills to practice advanced concepts like mobilization, PNF etc

CLO2: To skills in various physiotherapy technique like Stretching, resistance exercise etc.

CLO3: To build student as a qualified Physiotherapist and to justify their work.

COURSE OUTCOME

At the end of the course, candidate will able to

CO 1: Demonstrate different therapeutic equipment operating procedures and yogic asanas.

CO 2: Apply different stretching techniques, resisted exercises and PNF pattern.

CO 3: Assess strength of individual muscles of upper limb, lower limb and trunk.

Course Content:

Topics	Hours
Unit 1: Gymnasium, Posture and Basic Yogic Posture	12
Structure and functions along with application of various equipment in a gymnasium. Normal and abnormal posture & practice various corrective techniques.Padahastasana /Padangusthanasana, Trikonasana, Utkatasana, admasana, Siddhasana,/Sukhasana, Bhujangasana, ArdhaSalabhasana, Paschimottanasana, Savasana, Dhanurasana, Ardha Halasana, Yogamudrasana, Uttanasana, Virasana,Vajrasana SetuBandhasana, Gomukhasana, Pavan-Muktasana, Halasana, Sarvangasana, Naukasana.	
Unit 2: Stretching	6
Stretching of individual and group muscles	
Unit 3: Resisted Exercise	12
Resisted exercises to individual and group muscles, open and closed kinematic exercises.	
Unit 4: PNF	18
PNF patterns to upper and lower limb	
Unit 5: MMT	12
MMT for upper limb, lower limb and trunk	

Program: Bachelor of Physiotherapy (BPT)
Semester: Third
Course: Principles of Bioelectrical Modalities – 1 Practical
Course Code: 23A304P

L	T	P	Credits
0	0	4	2

COURSE LEARNNG OBJECTIVE

CLO 1: To provide exposure to students & gain skilled knowledge of therapeutic agents used in rehabilitation.
CLO 2: To acquire the skills to plot SD Curve using Stimulator
CLO 3: To makes student ready for future to practice as a qualified Physiotherapist.

COURSE OUTCOME
At the end of the course, candidate will able to
CO 1: Apply bioelectrical principles knowledge in electro therapy.

CO 2: Demonstrate electrotherapy instruments, principles of their functioning, usage, choice of dosage and safety implications for human beings.

CO 3: Apply TENS, IFT, Iontophoresis technique etc.

CO 4: Plot SD Curve, Chronaxie, Rheobase in graph.

Course Content:

Topics	Hours
Unit 1: Demonstration	6
Demonstration of Bioelectrical principle, Demonstration of electrotherapy instruments, principles of their functioning, usage, choice of dosage and safety implications for human beings	
Unit 2: Electro Diagnostics Test	24
Plotting SD graph, diagnosis using electro diagnostic test – FG test and SD curve.	
Unit 3: Stimulation	18
Stimulation of motor points, stimulation of individual muscle and group muscle, Iontophoresis	
Unit 4: TENS and IFT	12
Placement of electrodes in IFT with dosimeter for various indications. Placement of electrodes in IFT with dosimeter for various indications.	

FOURTH SEMESTER

Program: Bachelor of Physiotherapy (BPT)
Semester: Fourth
Course: Pharmacology
Course Code: 23A401

L	T	P	Credits
4	0	0	4

COURSE LEARNING OBJECTIVE:

CLO 1: To acquire the knowledge of pharmacological effects of commonly used drugs by patients referred for physiotherapy

CLO 2: To make the student aware of adverse reactions, precautions to be taken, contraindications of various drugs, formulation and root of administration.

CLO 3: Get the awareness of other essential and commonly used drugs by patients.

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COURSE OUTCOME:

At the end of the course, candidate will able to

CO 1: Understand the basic principles of general pharmacology
CO 2: Understand the basic pharmacology of commonly used drugs.

CO 3 Analyze the importance of drugs in the overall treatment including Physiotherapy.

Course Content:

Topics	Hours
UNIT 1: General Pharmacology	5
Introduction & general concepts, Pharmaco-kinetics (routes of administration, metabolism & elimination), Pharmaco-dynamics (mechanism of drug action, therapeutic & side effects, toxicity).	
UNIT 2: Autonomic Nervous System	9
Brief outline of Sympathetic-parasympathetic nervous system, Therapeutic agents-uses, effects and interaction with physical therapy. Central Nervous System: Anaesthetic agents-uses, side effects and interaction with physical therapy, Sedatives and hypnocs - uses, side effects and interaction with physical therapy, Anti - epileptic drugs- uses, side effects and interaction with physical therapy	
UNIT 3: **Analgesics**	10
Uses, side effects and interaction with physical therapy, Anti-inflammatory drugs- uses, side effects and interaction with physical therapy, Psychotherapeutic agents- uses, side effects and interaction with physical therapy, Alcoholism and drug dependence and interaction with physical therapy, Therapeutic agents used for movement disorders- uses, side effects and interaction with physical therapy.	
UNIT 4: Cardio-vascular System:	12

Therapeutic agents (classification, effects on cardio-vascular system, uses & adverse reactions), Drugs used in cardiac failure, hypertension & arrhythmias and interaction with physical therapy, Drug therapy in vascular disease & ischaemia and interaction with physical therapy.	
UNIT 5: Respiratory system and Gastrointestinal system	12
Respiratory system: Therapeutic agents, uses, side effects and interaction with physical therapy; Gastrointestinal system: Therapeutic agents in Peptic ulcer, Diarrhoea- uses, side effects and interaction with physical therapy	
UNIT 6: Endocrinal hormones, Diabetes mellitus and Geriatrics	12
Thyroid, adrenal, parathyroid hormones – uses, side effects and interaction with physical therapy; Diabetes mellitus: Drug therapy and its interaction with physical therapy; Geriatrics: Pharmacological challenges in geriatric age group and its effects on physical therapy.	

Suggested Readings:

Text Books:

1. S Tripathi, K.D. Essential of Medical Pharmacology, New Delhi, 1985
2. Laurence, D.R.Clinical Pharmacology ELBS, London 1975

Reference Books:

1. Eddy, Lynne, Physical Therapy pharmacology, Mosby, London 1992
2. Barbar, F.S.K.Essential. of Pharmacotherapeutics S. Chand, New Delhi 200

Program: Bachelor of Physiotherapy (BPT)
Semester: Fourth
Course: Biomechanics – II
Course Code: 23A402

L	T	P	Credits
3	0	0	3

COURSE LEARNING OBJECTIVE:
CLO 1: The primary purpose of this paper is understanding basic biomechanics of human body different joints
CLO 2: To acquire the knowledge of normal and abnormal gait.
CLO 3: To gain knowledge about posture and ergonomics and its correction.

COURSE OUTCOME
At the end of the course, candidate will able to
CO 1: Describe and analyze the regional structure and functional biomechanics of major joints.
CO 2: Recall and apply anatomical knowledge to explain the biomechanics of spine, major joints of upper and lower extremities.
CO 3: Differentiate normal and abnormal human gait and perform comprehensive gait analysis.
CO 4: Apply ergonomics principle to assess risk factors and develop strategies for preventing injuries.

Course Content:

Topics	Hours
Unit 1: Regional Structure and Function of Joints - I:	12
Shoulder complex, Elbow complex, Wrist and Hand complex	
Unit 2: Recall Anatomy	10
Recall anatomy and study the biomechanics of the spine, shoulder girdle, joints of the upper extremity, pelvic girdle and the joints of the lower extremity	
Unit 3: Regional Structure and Function of Joints - II:	11
The vertebral column, Hip complex, Knee complex, Ankle and Foot complex.	
Unit 4: Gait and Ergonomics	12
Description of normal gait, determinants of gait, spatiotemporal features, and analysis. Gait division: Types, causative factors and analysis. Ergonomics- Definition, Physiological and biomechanical risk factors, Visual display terminal and workstation ergonomics, Ergonomics in home activity, Leisure activity prevention, modification and rehabilitation of work-related issues.	

Suggested Readings:
Text Books:

1. Norkin & Levange, Joint Structure and Function-A comprehensive Analysis, F.A Davis.
2. Norkins & White, Measurement of joint motion-A guide to goiniometry, F.A Davis.

Reference Books:

1. Smith, Brunnstrom's clinical kinesiology, F.A Davis.

Program: Bachelor of Physiotherapy (BPT)
Semester: Fourth
Course: Advance Exercise Therapy – II
Course Code: 23A403

L	T	P	Credits
4	0	0	4

COURSE LEARNING OBJECTIVE:

CLO 1: The primary purpose of this paper is to impart advanced knowledge about hydrotherapy, aerobic exercise and joint mobilization.

CLO 2: Understanding of the skill of use of advanced concepts & techniques like gait training, breathing exercise, balance and coordination training etc

CLO 3: To makes student ready for future to practice as a qualified Physiotherapist.

COURSE OUTCOME

At the end of the course, candidate will able to

CO 1: Understand principles, indications, types, contraindications, precautions and appropriate methods of application of aerobic exercises, hydrotherapy, breathing exercises, balance and coordination exercises etc.

CO 2: Understand concepts of various mobilization/manipulation techniques and its method of application.

CO 3: Demonstrate gait training, crutch walking, balance and coordination exercise.

Topics	Hours
UNIT 1: Balance and Coordination Exercise	8
Discuss the mechanism of balance, equilibrium and stability of body. Discuss the physiology of Co-ordination, Appreciate the causes and pathophysiology of Inco-ordination, Demonstrate Test for co-ordination: (equilibrium test, non-equilibrium test), Discuss the Principles of co-ordination exercise, Discuss Frenkel's Exercise in terms of its effects, mechanism, indications and Evidence, Demonstrate skills in prescribing Frenkel's exercise (Prescription progression, home exercise).	
UNIT 1: Aerobic Exercises	8
Definitions, Physiological response to Aerobic Exercise, Evaluation of aerobic capacity – exercise testing, Determinant of Aerobic Exercise, Physiological Changes with Aerobic Training, Aerobic Exercise Program, Applications of Aerobic Program in patients with chronic illness.	
UNIT 2: Hydrotherapy and Soft Tissue Injury	8
Definitions, Goals and Indications, Precautions and Contraindications, Properties of water, Therapeutic Exercises in Hydrotherapy, Special equipment used. Soft Tissue Injury: General Description of Inflammation and repair, Acute, Sub Acute, and Chronic stage, General Treatment Guidelines.	
UNIT 3: Breathing Exercises I	6

Aims and Goals of Breathing Exercises, Procedures of Diaphragmatic Breathing, Segmental Breathing, Pursed-Lip Breathing, Preventing and Relieving Episodes of Dyspnea.	
UNIT 4: Breathing Exercises II	10
Positive Expiratory Pressure Breathing, Respiratory Resistance Training, Glossopharyngeal Breathing. Exercises to mobilize the chest, Postural Drainage, Manual Technique used in Postural Drainage, Postural Drainage Positions, Modified Postural Drainage.	
Unit 5: Gait Training and Yoga	6
Definition, Different methods of Gait Training, Gait Training in Parallel Bars, Walking Aids: Types: Crutches, Canes, Frames; Principles and training with walking aids.	
UNIT 6: Joint mobilization	14
Definition – Mobilization, Manipulation, indications, limitations, contraindications and precautions, applications of Mobilization technique to various joints, Principles of Maitland, Mulligan and Mckenzi joint Manipulation techniques.	

Suggested Readings:

Text Books:

1. Kisner & Colby, Therapeutic Exercises Foundations and Techniques, F A Davis.
2. Gardiner, Principle of Exercise Therapy, C.B.S Delhi.

Reference Books:

3. Vos et al, Propoceptive Neuromuscular Facilitation, Williams &Wilkins.
4. Hollis, Practical Exercise Therpy, Blackwell Scientific Publications.

Program: Bachelor of Physiotherapy (BPT)
Semester: Fourth
Course: Principles of Bioelectrical Modalities – II
Course Code: 23A404

L	T	P	Credits
4	0	0	4

COURSE LEARNING OBJECTIVE:

CLO 1: To acquire the skills to practice various high frequency current.

CLO 2: To impart basic knowledge and understanding of superficial heat, cryotherapy, actinotherapy etc

CLO 3: To give basic idea about NCV, EMG and biofeedback.

COURSE OUTCOME

At the end of the course, candidate will able to

CO 1: Demonstrate the use and clinical application of high-frequency currents such as SWD, MWD and UST.

CO 2: Perform various actinotherapy procedures using LASER, Ultraviolet Radiation (UVR), and Infrared Radiation (IRR).

CO 3: Describe and apply various therapeutic heat and cold modalities effectively.

CO 4: Apply and use various diagnostic instrument like EMG, NCV, Biofeedback etc

Course Content:

Topics	Hours
UNIT 1: High frequency currents	16
SWD and MWD-Production, biophysical effects, types, therapeutic effects, techniques of application, indications, contraindications precautions, operational skills and patient preparation. High frequency sound waves (Ultrasound)-Production, biophysical effects, types, therapeutic effects, techniques of application, indication, contraindications, precaution operational skill and patient preparation. Traction: Effect, Types, Modes, Indications, Contraindications, Dosage.	
UNIT 2: Agents of Electrotherapy - Actinotherapy	10
Therapeutic Light Physiotherapy (LASER) & Actinotherapy (IRR & UVR) Definition, Wavelength, frequency, types & sources of generation, techniques, physical principles, biophysical effects, types, production, therapeutic effects, techniques of application, Indications, contraindications precautions operational skill and patient preparation.	
UNIT 3: Therapeutic mechanical pressure (Intermittent compression therapy), Therapeutic cold (cryotherapy)	9
Intermittent compression therapy - Principles, biophysical effects, types, therapeutic effects, indications, contraindication, precautions, operational Skill and patient preparation. Therapeutic cold (cryotherapy) –source, biophysical effects, types, therapeutic effects, Indications, contraindications, precaution, application, techniques and patient preparation.	
UNIT 4: Therapeutic heat therapy (Paraffin wax bath, Moist heat, Electrical heating pads and Fluidotherapy, Contrast bath)	8

Mechanism of production, Mode of heat transfer, Physiological & therapeutic effects, Indications, contraindications, precautions, operational skills of equipment & patient preparation.	
UNIT 5: Electrical Reactions and Electro –diagnostic tests	17
Type of lesion and development of reaction of degeneration. E.M.G. and NCV – Instrumentation, definition & basic techniques of E.M.G. and NCV. Bio-feedback – Instrumentation, principles, therapeutic effects, indications, contraindication Limitations, precautions, operational skill and patient preparations.	

Suggested Readings:

Text Books:

1. Froster, A. and Palastanga, N, Clayton's Electrotherapy: Theory and Practice, AITBS, Delhi 1999.
2. Singh, Jagmohan, Textbook of Electrotherapy, Jaypee, New Delhi.

Reference Books:

1. Jhon, Low & Ann, Reed Butterworth Heine, Electrotherapy Explained: Principles, Oxford 2000.

Program: Bachelor of Physiotherapy (BPT)
Semester: Fourth
Course: Character Building and Holistic Development of Personality II (Yoga and Physical Fitness)
Course Code: 23AVAC201

L	T	P	Credits
2	0	0	2

COURSE LEARNING OBJECTIVE

CLO 1: To generate awareness among students about health and yoga.

CLO 2: To encourage students to be environmentally conscious, conserve water and practice good hygiene.

CLO 3: To acquaint the students with the fundamental principles of national unity and integration through practicing yoga.

CLO 4: To develop Annamaya Kosha (Physical Development) and Pranamaya Kosha (Development of Prana).

COURSE OUTCOME

On completion of the Course, the students will be able to:

CO 1: Develop a good understanding of spiritual and mental health.

CO 2: Adapt the concept of sustainability and development.

CO 3: Understand the importance of Yoga and practice it in day to day life.

CO 4: Enable to develop Annamaya Kosha and Pranamaya Kosha.

Course Content:

Suggested Reading:

- Yoga for Everyone, B.K.S.Iyengar, Dorling Kindersley Ltd; New Delhi
- Yoga the Path to Holistic Health, .B.K.S.Iyengar, Dorling Kindersley Ltd; New Delhi
- Science of Yoga, Ann Swanson, Dorling Kindersley Ltd; New Delhi

Topics	Hours
Unit I: Physical Vital Development	
• Health: Meaning, Concept, Dimensions of health (mental, physical, social and spiritual) and health related general habits. • Ideal daily routine/ Lifestyle : Meaning, Concept, Principles and its related practice • Balanced Diet : Meaning, Concept, Benefits, Alkali and Acid, Balanced Diet according to Desh (location), Kaal (time), Ayu (age) and Ritu (season) • Ritucharya (Seasonal Habits) : Meaning, general Introduction, Concept, Month and Festivities according to season, Nature of Earth, Lifestyle according to Shishir Season. • Sukshama Vyayama and Surya Namaskara : General Introduction, Precautions and Practice.	6
Unit II: Yoga and its Importance	
• Yoga: Meaning, Concept, Aims and Objectives, Types. • Diet and Health : Conditions, Malnutrition (Undernutrition and Over Nutrition) causes, Problems and Solutions, Common points of consideration for nutrition. • Vasant Ritucharya: Lifestyle according to Spring season; Lifestyle- General Introduction, Concept, Month and Festivities according to season. • Pranayama: General Introduction (Bandh, Nadi and Chakra), Importance, Eligibility, Time, Place, position, Principles of Practice and Precautions • Asana: General Introduction, Types, Benefits, Precaution and Practice (Asanas in Standing position) • Practice of Sukshama Vyayama and Surya Namaskara	6
Unit III: Yoga and Physical Fitness	
• Ashtanga Yoga: General Introduction, Parts, Meaning of Yama and Niyama, Concept, aims and Objectives. • Diet and Health: Nutrients of Food -Carbohydrates, Proteins and Fats – Structure/Elements, Requirement/Utility & Sources • Grisham Ritucharya: Lifestyle according to summer season- General Introduction, Concept, Month and Festivities according to season, Nature of the Earth. • Pranayama: Importance, Rules, Precautions and Practice of Inhalation (Purak) Exhalation (Rechak) and Holding of Breath • Asanas: (Bending Asanas)- General Introduction, Benefits, Precautions and practice of Padhastasana, Utkataana, Garudasana, Tulasana and Ardg-Chandrasana • Practice of Sukshama Vyayama and Surya Namaskara • Varsha Ritucharya: Lifestyle according to rainy season- General Introduction, Concept, Month and Festivities according to season, Nature of the Earth. • Diet and Health: Nutrients of Food – Vitamins, Mineral and Water structures/elements, Requirement & Sources. • Pranayama: Importance, Rules, Precautions and Practice of Anuloma-Viloma, Bhramari and Kapalbhati Pranayama • Asanas: (In Sitting Position) - General Introduction, Benefits, Precautions and practice . • Practice of Sukshama Vyayama and Surya Namaskara	9

L	T	P	Credits
0	0	2	1

Unit IV: Practices of Yoga	
• Sharad Ritucharya: Lifestyle according to Autumn season- General Introduction, Concept, Month and Festivities according to season, Nature of the Earth. • Pranayama: Importance, Rules, Precautions and Practice of Chandrabhedi, Suryabhedi and Ujjai Pranayama. • Asanas: (asanas performed in Supine position) - General Introduction, Benefits, Precautions and practice. • Practice of Sukshama Vyayama and Surya Namaskara. • Hemant Ritucharya: According to Hemant season- Meaning, General Introduction, Concept, Month and Festivities according to season, Nature of the Earth. • Pranayama: Importance, Rules, Precautions and Practices of Sheetali, Sheetkari and Nadi Shodhan Pranayama. • Asanas: (asanas performed in Prone position) - General Introduction, Benefits, Precautions and practice . • Practice of Sukshama Vyayama and Surya Namaskara • Self Defense: Meaning, Purpose, Required Capabilities; • Relaxation: Shoulder-movement exercise for Spine & maintaining the balance • Marmasthala – Common Vulnerable/Vital Points • Prahara : Meaning, Striking Organs, Types of Strikes, Precautions. • Preventing possible strikes, Preventing Organs and types/uses	9

Program: Bachelor of Physiotherapy (BPT)
Semester: Fourth
Course: Biomechanics – II Practical
Course Code: 23A402P

COURSE LEARNING OBJECTIVE:

CLO 1: The primary purpose of this paper is understanding basic biomechanics of human body different joints

CLO 2: To acquire the knowledge of normal and abnormal gait.

CLO 3: To gain knowledge about posture and ergonomics and its correction.

COURSE OUTCOME
At the end of the course, candidate will able to
CO 1: Analyze and interpret the kinetics and kinematics of human gait.
CO 2: Apply biomechanical principles to assess & evaluate joint and gait function, across different movement sciences.
CO 3: Describe and differentiate the structural and functional biomechanics of major human joints.

Course Content:

Topics	Hours
Unit 1: Gait	6
Kinematics and kinetics of gait, gait in running and stair climbing.	
Unit 2: Joints	24
Joint structures and functions of different joints.	

Program: Bachelor of Physiotherapy (BPT)
Semester: Fourth
Course: Advanced Exercise Therapy – II Practical
Course Code: 23A403P

L	T	P	Credits
0	0	4	2

COURSE LEARNING OBJECTIVE:

CLO 1: To acquire the skills to practice advanced concepts like Hydrotherapy, aerobic exercise, etc.

CLO 2: To skills in various physiotherapy technique like breathing exercise, gait training, postural drainage etc.

CLO 3: to build student as a qualified Physiotherapist and to justify their work.

COURSE OUTCOME

At the end of the course, candidate will able to

CO 1: Demonstrate warm-up exercises, cool-down exercises, aerobic exercises, hydrotherapy exercises etc.
CO 2: Apply manual traction and mobilization to individual joints.

CO 3: Perform gait patterns using various walking aids, balance and coordination exercises.

Course Content:

Topics	Hours
Unit 1: Equilibrium Balance, Coordination and Gait training	14
Equilibrium/balance & practice various to improve balance, Coordination Exercise, Frenkel's Exercise, Gait training and uses of various assistive device during walking	
Unit 2: Hydrotherapy	6
Structure and functions of hydrotherapy equipment and their applications.	
Unit 3: Traction	8
Various traction techniques, including manual, mechanical & electrical procedures	
Unit 4: Mobilization	22
Joint Mobilization to individual joint	
Unit 5: Aerobic Exercise	10
Warm up exercises, aerobics–cool down exercises.	

Program: Bachelor of Physiotherapy (BPT)
Semester: Fourth
Course: Principles of Bioelectrical Modalities – II Practical
Course Code: 23A404P

L	T	P	Credits
0	0	4	2

COURSE LEARNING OBJECTIVE:

CLO 1: To provide exposure to students & gain skilled knowledge of therapeutic agents used in rehabilitation.

CLO 2: To acquire the skills to interpret EMG, NCV reports etc.

CLO 3: To makes student ready for future to practice as a qualified Physiotherapist

COURSE OUTCOME

At the end of the course, candidate will able to

CO 1: Apply bioelectrical principles knowledge in electro therapy.

CO 2: Demonstrate electrotherapy instruments, principles of their functioning, usage, choice of dosage and safety implications for human beings. US, SWD, IRR, MWD.

CO 3: Demonstrate the different technique of UVR exposure, calculate test dose.

CO 4: Apply LASER and using dosimetry measurement.

CO 5: Perform different technique of treatment and application of Hydrocollator packs, cryotherapy, contrast bath, wax therapy.

Course Content:

Topics	Hours
Unit 1: Demonstration of High Frequency Current Instruments	16
Demonstration of electrotherapy instruments, principles of their functioning, usage, choice of dosage and safety implications for human beings. UST, SWD, IRR, MWD.	
Unit 2: UVR and LASER	10
Demonstrate the technique of UVR exposure for various conditions – calculation of test dose, Calculation of dosage and technique of application of LASER	
Unit 3: Superficial Heating and Cryotherapy	12
Technique of treatment and application of Hydrocollator packs, cryotherapy, contrast bath, wax therapy.	
Unit 5: EMG	8
To observe various Electro Myography (EMG) procedures.	
Unit 6: NCV	8
To observe various Nerve Conduction Velocity (NCV) procedures.	
Unit 7: Biofeedback	6
To study a Bio feedback unit, its operation and different methods of application – region wise.	

Program: Bachelor of Physiotherapy (BPT)
Semester: Fourth
Course: Radiology Practical
Course Code: 23A406P

L	T	P	Credits
0	0	3	1

COURSE LEARNING OBJECTIVE

CLO1: To provide exposure and to gain knowledge about X ray plate and reading it.
CLO2: To give general idea about bronchography, CT scan, MRI etc.
CLO3: to build student as a qualified Physiotherapist and to justify their work.

COURSE OUTCOME

At the end of the course, candidate will able to

CO 1: Identify different bone and abnormality in the x-ray.

CO 2: Identify pathology in CT scan, MRI, USG.

CO 3: Correlate bronchograpy with patient condition.

CO 4: Analyse macroradiograph, KV Technique.

Course Content:

Topics	Hours
Unit 1: X-Ray	20
Upper extremity, Lower extremity (including Pelvis) - basic views, Chest including thoracic age and sternum. Spine - Cervical, dorsal, lumbar, lumbo-sacral (including functional views), Skull – including trauma cases, Facial bones (nasal bones, zygoma, orbits, maxilla), Mandible, Temporo-Mandibular Joints, Mastoids, petrous temporal bones, Abdomen - erect, supine, lateral decubitus.	
Unit 2: Soft Tissue, Dental, Paediatrics, Foreign Body Localization	11
Soft tissue radiography: Larynx, pharynx, nasopharynx, thoracic inlet, Dental radiography, General Paediatric Radiography, Foreign body localization.	
Unit 3: High KV, Macroradiography, Bronchography	6
High kV technique, macroradiography, Screening - Bronchography	
Unit 4: Scan and USG	6
Basic principle of C.T Scan and M.R.I., Ultrasonograph	
Unit 5: Radiology Therapy	2
Radiology as therapeutic mode	

FIFTH SEMESTER

Program: Bachelor of Physiotherapy (BPT)
Semester: Fifth
Course: Orthopaedics
Course Code: 23A501

L	T	P	Credits
4	0	0	4

COURSE LEARNING OBJECTIVE

CLO 1: Learn the essentials concerning performing a history and physical examination

CLO 2: Learn the principles of interpreting a plain radiograph (be able to recognize a fracture/dislocation)

CLO 3: Recognize the historical symptoms of trauma patients

CLO 4: Know the evaluation strategy for the patient with traumatic injury.

COURSE OUTCOME

At the end of the course, candidate will able to

CO 1: Understand different types of fracture and dislocation of upper limb, lower limb, spine and Skull.

CO 2: Understand different orthopedic procedure like arthrodesis, arthroplasty, osteotomy, Bone grafting, tendon transfer etc.

CO 3: Describe different orthopedic condition and treatment like tennis elbow, golfer's elbow, Dequervain's disease, carpal tunnel syndrome, arthritis, etc.

CO 4: Understand different infection and non-infection condition and management like tumor, Poliomyelitis, leprosy, nerve injury, deformities.

Course Content:

Topics	Hours
UNIT 1: Introduction to Orthopedics, Principles of Operative Treatment, Sports Injuries	10
Introduction to Orthopedic terminology ,Types of pathology commonly dealt with, clinical examination, common investigations X- rays & imaging techniques and outline of Non operative management. Principles of operative treatment: List indications, Contraindication and briefly outline principles of Arthrodesis, Arthroplasty, Osteotomy, Bone grafting, Tendon- Transfers and Arthroscopy. Sprains and Muscle strains: List common sites of sprains and muscle strains. Describe the clinical manifestations and treatment Viz. tennis elbow, golfer's elbow, Dequervan's disease, tenosynovitis, trigger finger, carpal tunnel syndrome and plantar fasciitis. Sports Injuries: Injuries related to common sports their classification and Management.	
UNIT 2: Fractures and dislocations I	7

General Principles, Outline the following, Types of fractures including patterns, open and close fractures, fracture- dislocations. Differences between dislocation subluxation, General & Local signs & symptoms of fractures & dislocation. Principle of management of fratures & dislocations, Prevention & treatment of complication including: Fracture- disease Volkman's ischeamic contracture, Sudeck's Atrophy, Carpal Tunnel Syndrome. Myositis Ossificans and Shoulder- Hand Syndrome. Fracture healing.	
UNIT 3: Fracture & Dislocations II	16
Enumerate major long bone fractures and joint injuries. Briefly describe their clinical features, principles of management and complications. Upper and Lower Limb Fracture & Dislocations: Enumerate major long bone fractures and joint injuries. Briefly describe their clinical features, principles of management and complications. Spinal Fractures and Dislocations: Outline the mechanism, clinical features, Principles of management and complications of spinal injuries. Recurrent Dislocations: Outline the mechanism, clinical features, principles of management and complications of recurrent dislocation of the shoulder and petalla.	
UNIT 4: Amputations, Bone & Joint Infections & Tumors	10
Classify amputations: List indication for surgery. Outline pre-operative, operative and prosthetic management. Outline prevention and treatment of complications. Bone & Joint Infections: Outline the etiology, clinical features, management and complications of septic arthritis, osteomyelitis. Tuberculosis (including spinal TB). Bone Joint Tumors: Classify and outline the clinical feature, management and complications of the following (benign/malignant) bone and joint tumors, Osteomas, osteosarcomas, osteoclastomas, Ewing's sarcoma, multiple myeloma.	
UNIT 5: Chronic Arthritis & Spinal Deformities	8
Outline of pathology: Clinical features, mechanism of deformities, management and complications of Rheumatoid arthritis, Osteoarthritis of major joints and spine, Ankylosing spondylitis. Neck & Back Pain, Painful Arc syndrome, Tendonitis, Facitis & Spasmodic Torticollis .Outline the above including clinical features and management. Spinal Deformities: Classify spinal deformities and outline the salient clinical features, management and complications of Scoliosis, Kyphosis and Lordosis.	
UNIT 6: Poliomyelitis, Congenital Deformities, Peripheral Nerve Injuries, Hand Injuries, Leprosy	9

Describe the pathology, microbiology, prevention, management and complications of polio. Outline the treatment of residual paralysis including use of orthoses. Principles of muscle transfer and corrective surgery. Congenital Deformities: Outline the clinical features and management of CTEV, CDH, flat foot, vertical talus, limb deficiency radial club hand and femoral, tibial and fibula deficiencies meningomyelocele Arthrogryposis multiplex congenita and Osteogenesis imperfecta. Peripheral Nerve Injuries: Outline the clinical features and management, including re- constructive surgery of radial, median and ulnar nerve lesions. Sciatic and lateral popliteal lesions. Brachial Plexus injuries including Erbs, Klumpke's crutch palsy. Hand injuries: Outline of clinical features, management and complications of skin and soft tissue injury, tendon injury, bone and joint injury. Leprosy: Outline of clinical features, management and complications of neuritis, muscle paralysis, tropic ulceration and hand & feet deformities	

Suggested Readings:

Text Books:

1. Maheshwari, Essential Orthopaedics, Jaypee Brothers Medical Publishers

2. Jayant Joshi & Prakash Kotwal, Essentials Of Orthopaedics & Applied Physiotherapy, Elsevier, New Delhi.

Reference Books:

2. Apley, Physical examination in Orthopaedics, Butterworth Heinmann

Program: Bachelor of Physiotherapy (BPT)
Semester: Fifth
Course: Neurology
Course Code: 23A502

L	T	P	Credits
4	0	0	4

COURSE LEARNING OBJECTIVE

CLO 1: To develop clinical expertise in the care of patients with cognitive, emotional, and/or behavioral problems related to neurological illness

CLO 2: To gain a broad knowledge in the field through extensive exposure to the core literature

CLO 3: Facilitate a broad based exposure to common neurologic problems with pathophysiology.

CLO 4: Formulate a differential diagnosis for patients with neurological symptoms.

COURSE OUTCOME

At the end of the course candidate will able to

CO 1: Explain the neuroanatomy and physiology.

CO 2: Understand the basic neurological conditions including its etiology, classification, pathology, clinical features, relevant investigations and complications.

CO 3: Demonstrate the knowledge of medical and surgical management of various neurological conditions.

CO 4: Summarize the assessment and evaluative procedures for a neurological patient.

Course Content:

Topics	Hours
UNIT 1. Neuroanatomy & neurophysiology	16
Review the basic anatomy of the brain and spinal cord including: Blood supply of the brain and spinal cord, anatomy of the visual pathway, connections of the cerebellum and extrapyramidal system, relationship of the spinal nerves to the spinal cord segments, long tracts of the spinal cords, the brachial and lumbar plexus and cranial nerves. Neurophysiology: Review in brief the Neurophysiological basis of tone and disorders of the tone and posture, bladder control, muscle contraction, movement and pain.	
UNIT 2: Neuro-Assessment & Management	14
Assessment and evaluative procedures for the neurological patient. Review of the principles of the management of a neurological patient. Management of pain. General assessment procedures and basic principles of management. Pre-Operative assessment and indications and contraindications for Neurosurgery. Electrical Stimulation of brain and spinal cord.	

UNIT 3: Neurological disorders – I	12
Briefly outline the etiogenesis, clinical features and management of the following:- Congenital and childhood disorders- Cerebral palsy, Hydrocephalus and Spine Bifida. Cerebrovascular accidents – General, classification, thrombotic, embolic, hemorrhagic & inflammatory, strokes, gross localization and sequelae. Trauna- localization, first and aid and management of sequelae of head injury and spinal cord injury.	
UNIT 4: Neurological disorders – II	6
Briefly outline the etiogenesis, clinical features and management of the following: Diseases of the spinal cord- Craniovertebral junction anomalies, Syringomyelia, Cervical and lumbar disc lesions. Tumors and spinal Arachnoiditis. Demyelinating diseases (central and peripheral)- Guillain-Barre Syndrome. Acute disseminated encephalomyelitis. Transverse myelitis and Multiple sclerosis.	
UNIT 5: Neurological disorders – III	6
Briefly outline the etiogenesis, clinical features and management of the following: - Degenerative disorders- Parkinson's disease and dementia. Infections- Pyogenic Meningitis sequelae, Tuberculosis infection of central nervous system and Poliomyelitis. Diseases of the muscle – Classification, signs, symptoms, progression and management. Peripheral nerve disorders – Peripheral nerve injuries, Equipment neuropathies and Peripheral neuropathies.	
UNIT 6: Neurological disorders – IV	6
Epilepsy: Definition, Classification and management. Myasthenia Gravis: Definition, course and management. Intra cranial Tumors – Borad classifications, signs and symptoms. Motor neuron disease – Definition, classification and management. Cranial Nerves - Types of disorders, clinical manifestation & management	

Suggested Readings:

Text Books:

1. Susasn B. Physical Rehabilitation Assessment and Treatment,FA Davis.
2. Kenneth.W.Lindsay,Neurology and Neurosugery illustrated,Elsevier.

Reference Books:

1. Richard.S.Snell,Clinical Neuroanatomy,Wolters Kluwer India Pvt.Ltd.

Program: Bachelor of Physiotherapy (BPT)
Semester: Fifth
Course: Cardiopulmonary
Course Code: 23A503

L	T	P	Credits
4	0	0	4

COURSE LEARING OBJECTIVE

CLO 1: Understand Cardiopulmonary Anatomy and Physiology

CLO 2: Identify and Assess Cardiopulmonary Conditions

CLO 3: Preform and Interpret Clinical Test

COURSE OUTCOME

At the end of the course, candidate will able to

CO 1: Recall anatomy and physiology of cardiopulmonary system

CO 2: Assess cardiopulmonary system

CO 3: Identify different types of cardiopulmonary condition and its management.

CO 4: Understand different cardiothoracic surgery

CO 5: Describe different vascular disease etc.

Course Content:

Topics	Hours
UNIT 1: Review of Cardiopulmonary anatomy and Physiology	10
Cardiopulmonary Anatomy: General Anatomy of Upper Respiratory tract, Surface Anatomy of Lungs, Anatomy of Heart. Cardiac Arrest and Resuscitation: ABC of Resuscitation –Basic life support, advanced life support and prolonged life support. Ventilation of Lungs and Transport of Gases: Ventilation of Lungs: Partial pressure of Oxygen & CO2, Dead space, Nervous control of Bronchial Muscles, Elasticity, Compliance, Surface Tension, Nervous control of Ventilation, Voluntary control of ventilation, Chemoreceptors. Composition of alveolar air, Alveolar Dead space, Diffusion Pathway Haemoglobin, CO2 carriage in blood, Acid Base reaction.	
UNIT 2: Assessment of Respiratory and Cardio-Vascular System	11
Assessment of Respiratory System: Tests for Ventilatory function, PEFR, FEV1, and Exercise testing, Clinical application of Lungs Function Test, Percussion and Auscultation. Abnormal Lung sounds. Chest Radiograph-X-Ray. Assessment of Cardio-vascular System: ECG-Leads, Tracing, Interpretation of Normal and Abnormal ECG, Arrhythmias, Heart Block ,Myocardial Infarction, Chamber Hypertrophy.	
UNIT 4: **Intensive care unit**:	8

Assessment of the critically ill patients, Monitoring in the ICU. Common conditions in the ICU – Head Injury, Pulmonary Oedema, Multiple Organ Failure, Neuromuscular Disease, Poisoning, Aspiration, ARDS, Shock etc, Dealing with Emergency situations in ICU,NICU / PICU treatment.	
UNIT 5: Thoracic conditions and Surgeries	18
Injury of Chest (Thorax)-Fracture of Rib, Emphysema, Pneumothorax, Hemothorax, Flail chest, Stove in Chest, Diaphragmatic disruption, Pulmonary insufficiency. Disorders of Chest: Pleural effusion, Empyema thoracic, Bronchiectasis, Tuberculosis, Tumours of Lungs. Thoracic and lung surgeries: Thoracotomy-Definition, Types of incisions with emphasis to the site of incision, muscle cut and complications, Pnumonectomy, Lobectomy, Segmentectomy, Thoracoplasty, Pleurectomy, Pleurodesis and Decortication of the lungs.	
UNIT 6: Cardiac and Peripheral Vascular System	13
Disorders of Heart- Definition, Clinical features, diagnosis and choice of management for the following disorders: congenital heart disease- Acyanotic congenital heart disease: Patent ductus arteriosus, Coarctation of aorta, Atrial septal defect, and Ventricular septal defect. Cyanotic congenital heart disease: Tetralogy of fallot, Transposition of great vessels. Acquired heart disease: Mitral stenosis & Insufficiency, Aortic stenosis and insufficiency, Ischaemic heart disease, Coronary artery disease, Cardiac tamponade, Acute pericarditis and Chronic constructive pericarditis (Pick's Disease). Cardiac Surgeries: Cardio- Plumonary bypass, Open and closed heart surgery, Transplant Surgery, Mitral Valvotomy. Peripheral Vascular Disease: Arterial Occulsion atherosclerosis), Arteriosclerosis, Thromboangitis Obliterans (Beurger's Disease), Raynaud's Disease Varicose veins and DVT.	

Suggested Readings:

Text Books:

1. S.Das, A Textbook of Surgery, Dr. Somen Das, Kolkota.
2. Patricia A.Downie Cash's Textbook of Chest,Heart and Vascular Disorders For Physiotherapists,Jaypee Brothers

Reference Books:

1. Katch & Katch, Essentials of Exercise Physiology, Wolters Kluwers.

Program: Bachelor of Physiotherapy (BPT)
Semester: Fifth
Course: Medicine with Paediatrics & Geriatrics - I
Course Code: 23A504

L	T	P	Credits
4	0	0	4

COURSE LEARNING OBJECTIVE

CLO 1: To impart knowledge and understanding of the various diseases & their symptomatology affecting human body for appropriated treatment and precautions whilst in physiotherapy setup.

CLO 2: Describe the signs and symptoms of the common acute pediatric illnesses

CLO 3: To understand the content differences in obtaining a medical history on a pediatric patient compared to an adult.

CLO 4: To develop an awareness of which clinical settings it is appropriate to obtain a complete medical history compared to a more limited, focused history.

CLO 5: Improve health care for elderly people or older adults by preventing and treating disease and disability that often comes with ageing.

COURSE OUTCOME

At the end of the course, candidate will able to

CO 1: Describe the etiology, patho-physiology, signs and symptoms and management about the metabolic and deficiency diseases.

CO 2: Analyze the effects of various infections on human body.

CO 3: Understand and analyze the diseases affecting the digestive, cardiovascular and respiratory system.

Course Content:

Topics	Hours
UNIT 1: Introduction to communicative disease & Bacterial Diseases	12
Introduction of modes of transfer of communicable diseases & general preventive measures. Bacterial Diseases: Tuberculosis, Leprosy, Rheumatic fever, Tetanus, Typhoid Fever, Diphtheria, Pneumonia, Bacillary Dysentery, gastroenteritis and Measles	
UNIT 2: Viral and Metabolic & Deficiency Diseases	12
Viral Diseases: Simplex and zoster, Varicella, Chicken pox, Measles Mumps, Hepatitis B & C, HIV, AIDS, & Influenza. Metabolic and Deficiency Diseases: Diabetes, Anemia, Vitamin & Nutritional, Deficiency diseases (special reference to child), diseases of the endocrine glands.	
UNIT 3: Diseases of Respiratory System	11

Asthma, Bronchitis, Massive collapse of lungs, Bronchiectasis Bronchial, Pneumonia, lung abscess, Emphysema, Empyema, Paralysis of diaphragm & vocal cords, chronic infection of larynx and trachea, Abnormalities of trachea, infract of lungs, chronic passive congestion, chronic obstruction pulmonary disease, chest wall deformities.	
UNIT 4: Diseases of Circulatory System	9
Thromobsis, Embolism, Gangrene, Valvular diseases Hemorrhage, Heart Malformation, various diseases of arteries, diseases of blood forming organs, Anemia, Leukemia, Leucocytosis, Peripheral vascular diseases, diseases of the lymphatic systems.	
UNIT 5: Diseases of the heart	9
Hypertension, Hypotension, Aortic aneurysm, Endocarditis, Pericarditis, Aortic Regurgitation, Cardiac Failure, coronary heart diseases, congenital heart malformation and its manifestation.	
UNIT 6: Diseases of Digestive System	7
Pharyngitis, spasm of the Oesophagus, Diverticulum stenosis, Gastric ulcer, Hematemesis Pyloric stenosis, Dyspepsia, Vomiting, Diarrhoea, Duodenal ulcer etc. Diseases of Liver: Jaundice Cirrhosis of liver, Abscess of liver, Ascitis.	

Suggested Readings:

Text Books:

1. Davidson, Principles and Practices of Medicine, Edward – Churchill Livingston
2. Krishna Rao, A short Textbook of Medicine, Jaypee Brothers.

Reference Books:

1. Hutchinson's Clinical Methods, Swash- Bailliere Tindall.
2. Ahuja Niraj, A short textbook of Psychiatry, Jaypee Brothers.
3. Behrman & Vaughan, Nelson's Textbook of Paediatrics, W.B. Saunders
4. Parthsarthy, Textbook of Paediatrics, Jaypee

Program: Bachelor of Physiotherapy (BPT)
Semester: Fifth

L	T	P	Credits
2	0	0	2

Course: Character Building and Holistic Development of Personality III (Universal Human Values and Ethics)
Course Code: 23AVAC301

COURSE LEARNING OBJECTIVE

CLO1: To familiarize students with Indian cultural values.

CLO2: To inspire students to preserve and protect values and ethics.

CLO3: To build moral, ethical, energetic individual dedicated towards the service of humanity.

CLO4: To focus on holistic development of an individual.

COURSE OTCOME

On completion of the Course, the students will be able to:

CO1: Understand the importance of Indian cultural values.

CO2: Learn to adapt, protect and preserve values and ethics.

CO3: Become a responsible citizen for serving the mankind.

CO4: Develop one's personality holistically in a balanced manner.

Course Content:

Topics	Hours
Unit I: Personality Development	5
• Personality Development: Meaning, Concept, Constituent elements of personality and Means/Ways of Personality Development. • Panchakosha: General Introduction, Meaning, Objectives, Characteristics and Significance. • Benefits of Panchakosha, development and deficiencies due to underdevelopment of Panchkosha.	
Unit II: Mental Emotional Development	
• Values and Individual: Non-Possession, Non- Stealing, Self Restrain, Enthusiasm, Dutifulnes, Reticence, Silence, Self-study, Considerateness and Self-respect.	

• Values and Family: Respectful Salutation, Obedience, Contentment, Patience, hospitality, Parent Service, Rectitude, Good Behaviour, Family feeling and worship.	5
Unit III: Indian Values	10
• Values and Society: Discipline, Social Responsibility and Duties of Citizens, Altruism/ Charity, Keeping good company, Gratefulness, Fraternity/ Friendship, Courtesy, Tactfulness, Soft Spoken and Feeling for the Oppressed. • Values and Constitution: Dignity of an Individual, Fundamental Duties, Fundamental rights, Directive Principles of State Policies, Social Equality, Democracy, Justice, Freedom, Sarva-Pantha Samman and Scientific Approach.	
Unit IV: Practice of Values and Ethics	10
• Values and Indian Culture: Integrity of the nation, Glory of the Past, Swadeshi, Nation Building, Patriotism, Mother Tongue, National Unity, Public Welfare, Equality and Spirituality. • Values and Vision of the World: Humanity, Integrity, Human rights, The Highest or Most Sublime Good, Vasudhaiva Kutumbakam, Tolerance, Peaceful Coexistence, World-Welfare, Environmental Protection, Swavalamban/Self-reliance	

Suggested Reading:

- My Idea of Education, Swami Vivekanand, Advaita Ashram, Kolkata
- Personality Development, Swami Vivekananda, Advaita Ashram, Kolkata.
- The Man India Missed the Most; Subhash Chandra Bose, huvan Lall, Notion Press, Chennai

Program: Bachelor of Physiotherapy (BPT)
Semester: Fifth
Course: Orthopaedics Practical
Course Code: 23A501P

L	T	P	Credits
0	0	4	2

COURSE LEARNING OBJECTIVE

CLO 1: This subject will help in gaining the skill of Orthopaedics and clinical examination and interpretation of the preoperative old cases and all the post-Operative cases.

CLO 2: Learn the principles of interpreting a plain radiograph (be able to recognize a fracture/dislocation)

CLO 3: Learn to take decision, making ability and treat different musculoskeletal conditions.

COURSE OUTCOME

At the end of the course, candidate will able to

CO 1: Understand the basics of subjective and objective assessment to clinical diagnosis.

CO 2: Apply the basic of subjective and objective assessment to clinical diagnosis.

CO 3: Analyze the basics of musculoskeletal system and musculoskeletal examination and formulate treatment plan.

Course Content:

Topics	Hours
UNIT 1: Assessment	15
Assessment PT assessment for Orthopedic conditions	
UNIT 2: Prescription & Case Records	15
Prescription of home program. Documentation of case records, and follows up	
UNIT 3: Clinical Diagnosis	6
Clinical diagnosis of the presentations	
UNIT 4: Investigations	6
Investigations and tests of different clinical presentations	
UNIT 5: Management	9
Management of the various disorders & surgeries	
UNIT 6: Practical Demonstration and Functional Assessment	9
Practical demonstration of basic principles of physiotherapy assessment, functional assessment and application of physiotherapy in orthopeadics conditions.	

Program: Bachelor of Physiotherapy (BPT)
Semester: Fifth
Course: Cardiopulmonary Practical
Course Code: 23A503P

L	T	P	Credits
0	0	4	2

COURSE LEARNING OBJECTIVE

CLO 1: This subject will help to execute effective Physiotherapeutic measure with appropriate clinical reasoning in cardiopulmonary patients.

CLO 2: This subject will help in gaining the skill of cardiopulmonary and clinical examination and interpretation of the preoperative old cases and all the post-Operative cases.

CLO 3: To improve the healthcare for the patients with cardio-respiratory illness.

COURSE OUTCOME

At the end of the course. candidate will able to

CO 1: Assess cardiopulmonary system

CO 2: Demonstrate Cardiopulmonary resuscitation

CO 3: Interpret ECG, Chest X-rays, ABG, R.P.E.- Borg's Scale, IHD, Blocks

Course Content:

Topics	Hours
UNIT 1: Assessment	15
Assessment of cardiopulmonary system.	
UNIT 2: Demonstration CPR	9
Demonstration of Cardiopulmonary resuscitation	
UNIT 3: Demonstration ECG	12
Demonstration of ECG machine and interpretation of Electrocardiograph	
UNIT 4: Spirometry	3
Demonstration of Incentive Spirometry	
UNIT 5: Interpretation	6
Interpretation of IHD and Blocks.	
UNIT 6: X-Ray	9
Interpretation of Chest X-rays (normal and abnormal)	
UNIT 7: ABG & RPE	6
Interpretation of A.B.G, R.P.E-Borg's scale	

Program: Bachelor of Physiotherapy (BPT)
Semester: Fifth
Course: PT**-** Clinicals - I
Course Code: 23A506P

L	T	P	Credits
0	0	16	8

COURSE LEARNING OBJECTIVE

CLO 1: The student will learn approach to the patient, collection of demographic data, art of history taking and bed side/OPD manners in relation to patients.

CLO 2: The student will learn proper diagnosis of each conditions of patient.

CLO 3: The student will learn physiotherapeutic management of different cases in OPD.

COURSE OUTCOME

At the end of the course, candidate will able to

CO 1: Apply the principles of basic anatomical, physiological and biomechanical concepts to clinical settings for assessment and diagnosis of a condition.

CO 2: Analyze the special tests for various tissues and systems of the body.

CO 3: Identify the signs & symptoms in different diseases and dysfunctions and elicited responses to various stimuli.

CO 4: Create an appropriate assessment of patient for deciding the appropriate management.

Course Content:

Topics	Hours
UNIT 1: Clinical Posting	120
The students will be posted in different departments in various setups. According to their planned curriculum.	

Note:

1. Every student will be asked to maintain a separate logbook consisting of minimum thirty case histories. The duly completed logbook should be submitted during practical examination.
2. Exam shall be conducted and student will be assessed according to:-
    - Bedside case presentations and case discussions
    - Lab sessions consisting of evaluation and assessment methods on student models, treatment techniques and practice sessions.

SIXTH SEMESTER

Program: Bachelor of Physiotherapy (BPT
Semester: Sixth
Course: General Surgery with Obstetrics & Gynaecology
Course Code: 23A601

L	T	P	Credits
4	0	0	4

COURSE LEARNING OBJECTIVE

CLO 1: Describe the principles of resuscitation of the general surgery patient
CLO 2: Participating in determining or confirming a diagnosis of pre & post-surgical cases.
CLO 3: Thorough preoperative evaluation and preparatory care & immediate postoperative and long-term follow-up care
CLO 4: Demonstrate knowledge of established and evolving medical evidence and its application to the diagnosis and treatment of obstetric and gynecologic conditions and diseases.

COURSE OUTCOME

At the end of the course, candidate will able to
CO 1: Understand the basic concepts of various skin conditions, injuries and infections..
CO 2: Recall the various surgical procedures involved in common surgeries.
CO 3: Explain the etiology, pathophysiology, clinical features, complications and management of shock and burns.
CO 4: Understand the basic anatomy of female uro-genital system.
CO 5: Analyze the role of normal female anatomy and physiology with pregnancy, labour and uro-genital dysfunction.
CO 6: Outline the various sterility and family planning methods.

Course Content:

Topics	Hours
UNIT 1: Wounds, Ulcers, Skin Infections and Shock	12
Wound-Definition, Types of wound, Basic phases of wound healing, Factors influencing Understand the basic anatomy wound healing, management of wound. Ulcers: Definition, Classification of ulcers. Infection of skin and subcutaneous tissue: Boil, Abscess. Carbuncle Cellulitis and Erysipelas-Definition, Pathology, Clinical Feature and Treatment. Shock and Fluid Electrolyte and Acid Base Balance: Shock-Definition, Types of Shock, Clinical management in different types of shock. Fluid, Electrolyte and Acid- Base balance-Physiology of body fluid, Exchange of fluid and electrolyte, Salt intake and output, Water balance, Electrolyte balance and Acid-Base balance, diagnosis and management.	
UNIT 2: Burn and Skin Grafting:	12

Burn- Definitions, Types of burn, Pathological Changes in burn cases, Complications and Management of burn. Skin Grafting: Indications, Methods of skin grafting and their procedure, Types of flaps and their uses. Role of Physiotherapy. Essentials of Surgery: Anaesthesia: Types of Anaesthesia and its effects on the patient. Incisions: Types of Incision, Clips, Ligatures and Sutures. Scars, fistula, Keloid. Surgical Techniques: Endoscopy–types, Biopsy – uses and types. Overview and Drainage systems and tubes used in Surgery.	
UNIT 3: Infections, hand injuries, Abdominal Surgeries, Other surgical procedures	12
Hand infection, suppurative infection, other infection, hand injuries, dupuytren's contracture. Miscellaneous Surgeries: Abdominal Surgeries. Cholecystectomy, Colostomy, Ileostomy. Gastrectomy, Hernias, Appendicectomy, Nephrectomy, Prostatectomy. Surgical oncology-Definition, Types, Clinical manifestation of cancer. Surgical procedures involved in the management of cancer, Mastectomy. Emergency surgical Procedure: Tracheostomy, Indications Steps, Post-Operative Care.	
UNIT 4: Basic Anatomy of Female Genital System and Pelvic Floor	9
Pelvis, Pelvic floor muscles, Perineum, Abdominal Muscles, Reproductive tract and Urinary Tract. Menstrual Cycle and Menopause: Menstrual Cycle: Phases of Menstrual Cycle, Structure and Role of Fallopian Tube, Ovaries, Disorders of Menstrual Cycle, Role of various female hormones , Hormonal Disorder of Female, Obesity and Female Hormones. Menopause: Physiology of Menopause, Complications, Effects on Various Systems and Management.	
UNIT 5: Pregnancy and Labour	9
Normal Gestations, Maternal Physiology in Pregnancy, Effect of pregnancy on various systems of body, Musculoskeletal disorders in Pregnancy, Antenatal Care, Prenatal and Perinatal Complications in Pregnancy. Labour: Stages of Labour, Process of Normal Labour, Labour Pain, Management of Normal Labour, Complications in Labour, Puerperium, Lactation. Surgeries involving female Genital Organ: Procedure of Caesarian Section, Episiotomy, Definition, Indications and Management of the following surgical procedures, Dilatation and Curettage , Hysterectomy ,Total Abdominal and Vaginal Salpingectomy, Myomectomy and Oophorectomy.	
UNIT 6: Uro-genital dysfunction and Sterlity & Family Planning	6
Uterine prolapse – classification & management (Conservative /Surgical) , Cystocele, Rectocele, Enterocele , Urinary Incontinence: Types, Causes, Assessment and Management, Pelvic Inflammatory Diseases ,Endometritis, Salpingitis, Polycystic Ovarian Disease (PCOD) .Sterlity and Family Planning: Sterlity: Causes of Sterlity, Management .Family Planning: Methods of Family Planning, Fertilty regulating Methods-Advantages and Disadvantages, Oral Contaceptive Pills-Adverse Effect, Benefits and Contraindications.	

Suggested Readings:

Text Books:

1. **S.Das, A Textbook of Surgery, Dr. Somen Das, Kolkota**.
2. Margaret Polden and Jill Mantle,Physiotherapy in Obstetrics and Gynaecology, Butterworth Heinemann Ltd.

Reference Books:

1. Williams Norman et al,Bailey & Love, Short Practice of Surgery,CRC Press.
2. D.C Dutta, Textbook of Gynaecology, Jaypee Brothers.

D.C Dutta, Textbook of Obstetrics

Program: Bachelor of Physiotherapy (BPT)
Semester: Sixth
Course: Physiotherapy in Orthopaedic Conditions
Course Code: 23A602

L	T	P	Credits
4	0	0	4

COURSE LEARNING OBJECTIVE

CLO 1: Learn the essentials concerning performing a history and physical examination
CLO 2: Learn the principles of interpreting a plain radiograph (be able to recognize a fracture/dislocation)
CLO 3: Recognize the historical symptoms of trauma patients
CLO 4: Know the evaluation strategy for the patient with traumatic injury.

COURSE OUTCOME

At the end of the course, candidate will able to
CO 1: Understand different orthopaedics clinical conditions related to Extremities and Spine.
CO 2: Integrate orthopaedics theoretical knowledge in Physiotherapy.
CO 3: Demonstrate clinical decision-making ability and treat different musculoskeletal conditions.

Course Content:

Topics	Hours
UNIT 1: Fractures, dislocation and deformities:	12
Principles of PT management in fractures - Guidelines for fracture treatment during period of immobilization and guidelines for treatment after immobilization period PT assessment and management of upper limb fractures and dislocations. PT assessment and management of lower limb fractures and dislocations including pelvis. PT assessment and management of spinal fractures. PT management in complications - early and late - shock, compartment syndrome, VIC, fat embolism, delayed and mal-union, RSD, myositis ossification, AVN, pressure sores etc. Physiotherapy Management of deformities: Congenital: CTEV, CDH, Torticollis, pes planus, pes cavus and other common deformities. Acquired: scoliosis, kyphosis, coxa vara, genu varum, valgum and recurvatum.	
UNIT 2: Infectious, degenerative and inflammatory conditions:	9
Infectious diseases of the bone & joints: Osteomyelitis – acute and chronic, Septic arthritis and Pyogenic arthritis, TB spine and major joints -knee and hip. Degenerative and Inflammatory conditions: Osteoarthritis - emphasis mainly on knee, hip and hand, Rheumatoid Arthritis, Ankylosing spondylitis, Gout, Perthes disease.	
UNIT 3: Regional Orthopaedics-I: Spinal conditions	9
PT assessment, aims, and management and home program of the following conditions : Cervical spondylosis, Lumbar spondylosis, Intervertebral disc prolapse ,Spinal canal stenosis, Spondylolisthesis, Spondylolysis, Coccygodynia, Sacro-iliac joint dysfunction, Sacralisation, Lumbarisation	
UNIT 4: Regional Orthopaedics - II - Upper Limb Conditions	15

Thoracic outlet syndrome, Shoulder instabilities, RSD, Periarthritis Shoulder, Rotator cuff Tears: Conservative and Post-Surgical PT Management, Impingement syndrome (Supraspinatus and Bicipital tendonitis) - conservative and Post-operative (sub-acromial decompression) PT management, AC joint injuries- rehabilitation. Elbow and forearm: Tennis elbow, Golfer's elbow Wrist and Hand: Wrist sprains, De Quervain's Tenosynovitis, Trigger and Mallet finger, Repair of ruptured Flexor and Extensor tendons-Post operative PT management, Carpal tunnel syndrome, Hand injury- types and their management.	
UNIT 5: Regional Orthopaedics - II - Lower Limb Conditions	9
Hip Joint surgeries - hemi and total hip replacement- Post operative PT management. **Knee**: ACL, PCL and MCL reconstruction surgeries -Post operative rehabilitation; Meniscectomy and meniscal repair - Post operative management; Pre patellar and Subacromial bursitis, PFPS, Plica syndrome, patellar dysfunction and Hoffa's syndrome etc. – conservative management; TKR – rehabilitation protocol; Patellar tendon ruptures and Patellectomy – rehabilitation, **Ankle and Foot –** Ligamentous tears- Post operative management; TA rupture; plantar fasciitis.	
UNIT 6: Amputation	6
Definition, levels, indications, types, PT assessment, aims, management pre and post operatively. PT management with emphasis on stump care and bandaging. Prosthesis Prescription and Training.	

Suggested Readings:

Text Books:

1. Jayant Joshi,Orthopaedic and applied physiotherapy,Elsevier India.
2. Brotzman,Clinical Orthopaedic Rehabilitation,Mosby.

Reference Books:

1. David.J .Magee,Orthopaedic Physical Assesment,Saunders.
2. Freddy M. Kaltenborn, Manual Mobilization of extremity joints,Orthopaedic Physical Therapy.
3. Susasn B. Physical Rehabilitation Assessment and Treatment,FA Davis.

Program: Bachelor of Physiotherapy (BPT)
Semester: Sixth
Course: Physiotherapy in Cardiopulmonary Conditions
Course Code: 23A603

L	T	P	Credits
4	0	0	4

COURSE LEARNING OBJECTIVE

CLO 1: Plan and Implement Physiotherapy Intervention

CLO 2: Apply Evidence Based Practice

CLO 3: Exhibit Ethical and Culturally Competent Behavior in Clinical Cardiopulmonary Setting

COURSE OUTCOME

At the end of the course, candidate will able to

CO 1: Explain anatomy and physiology of cardiorespiratory system in different age group.
CO 2: Understand different Cardiopulmonary clinical conditions .
CO 3: Analyze and apply Cardiopulmonary theoretical knowledge in Physiotherapy .
CO 4: Demonstrate clinical decision-making ability and treat different Cardiopulmonary conditions in different clinical settings.

Course Content:

Topics	Hours
UNIT 1: Adult & Pediatric lung, Investigation, ICU	7
Anatomical and Physiological differences between the Adult and Pediatric lung. Bedside assessment of the patient-Adult & Pediatric. Investigations and tests – Exercise tolerance Testing – Cardiac & Pulmonary, Radiography, PFT, ABG, ECG. Introduction to ICU: ICU monitoring –Apparatus, Airways and Tubes used in the ICU, Physiotherapy in the ICU – Common conditions in the ICU, Dealing with an Emergency Situation in the ICU	
UNIT 2: Physiotherapy technique to increase lung volume	6
Physiotherapy techniques to increase lung volume – controlled mobilization, positioning, breathing exercises, Neurophysiological Facilitation of Respiration, Mechanical aids - Incentive Spirometry, CPAP, IPPB, BiPAP.	
UNIT 3: Physiotherapy technique to decrease work of breathing and clear secretion	6
Measures to optimize the balance between energy supply and demand, positioning, Breathing re-education – Breathing control techniques, Physiotherapy techniques to clear secretions – Hydration, Humidification & Nebulisation, Mobilisation and Breathing exercises, Postural Drainage, Manual techniques – Percussion, Vibration and Shaking, Rib Springing, ACBT, Autogenic Drainage, Facilitation of Cough and Huff, Nasopharyngeal Suctioning, Mechanical Aids – PEP, Flutter, Acapella, RC Cornet, IPPB, Facilitation of Cough and Huff, Suctioning. O2 Therapy and Mechanical Ventilation.	
UNIT 4: Drug therapy and Wound, Ulcer & Burn management	15

Drugs to prevent and treat inflammation, Drugs to treat Bronchospasm, Drugs to treat Breathlessness, Drugs to help sputum clearance, Drugs to inhibit coughing, Drugs to improve ventilation, Drugs to reduce pulmonary hypertension, Drug delivery doses, Inhaled Nebulizers. Management of wound ulcers- Care of ulcers and wounds - Care of surgical scars, Burns management - Role of physiotherapy in the management of burns, post grafted cases- Mobilization and Musculo-skeletal restorative exercises following burns. 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 5: Physiotherapy in dermatology & chest	9
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. Care of anesthetic hand and foot; Evaluation, planning and management of leprosy- prescription, fitting and training with prosthetic and orthotic devices**.** Neonatal and Pediatric Physiotherapy – Chest physiotherapy for children, the neonatal unit, Modifications of chest physiotherapy for specific neonatal disorders, Emergencies in the neonatal unit.	
UNIT 6: Physiotherapy in Lung Conditions	9
Physiotherapy in Obstructive lung conditions, Physiotherapy in Restrictive lung conditions. Management of breathlessness. Pulmonary Rehabilitation. Physiotherapy following Lung surgeries. Respiratory failure – Oxygen Therapy and Mechanical Ventilation. Lung Disease, Pulmonary Oedema, Multiple Organ Failure, Neuromuscular Disease, Smoke Inhalation, Poisoning, Aspiration, Near Drowning, ARDS	
UNIT 7: Physiotherapy in Cardiac, PVD & miscellaneous conditions	8
Cardiac Rehabilitation. Physiotherapy management following cardiac surgeries Physiotherapy management following Peripheral Vascular Disease (PVD). Abdominal Surgeries - Management of Pulmonary Restorative Dysfunction following surgical procedures on Abdomen and Thorax. Physiotherapy in the following disease conditions: Hypertension, Diabetes, Renal Failure and Obesity	

Suggested Readings:

Text Books:

1 Cash`s Text book for Physiotherapists in Chest, Heart & Vascular diseases- Jaypee bros. Publication

2 Cash`s text book in General Medical & Surgical conditions for Physio therapists

3 Chest Physical therapy & Pulmonary rehabilitation-by Donna Frownfilter

4 Brompton`s hospital guide

5 Physical Rehabilitation - O'sullivan

Reference Books:

1. Physio Therapy in Cardio- Vascular rehabilitation-Webber

2. Exercise & the Heart –Wenger

3. ECG by P.J. Mehta,
4. J. Hampton (Hand book of ECG made easy)
5. Cardiopulmonary Physical therapy by Irwin Scott.
6. Physiotherapy in respiratory care – Alexandra Hough

Program: Bachelor of Physiotherapy (BPT)
Semester: Sixth
Course: Medicine with Paediatrics & Geriatrics-II
Course Code: 23A604

L	T	P	Credits
3	0	0	3

COURSE LEARNING OBJECTIVE

CLO 1: To impart knowledge and understanding of the various diseases & their symptomatology affecting human body for appropriated treatment.
CLO 2: Describe the signs and symptoms of the common acute pediatric illnesses

CLO 3: To understand the content differences in obtaining a medical history on a pediatric patient compared to an adult.
CLO 4: To develop an awareness of which clinical settings it is appropriate to obtain a complete medical history compared to a more limited, focused history.

COURSE OUTCOME

At the end of the course, candidate will able to
CO 1: Describe the etiology, patho-physiology, signs and symptoms and management in brief about the skin, infectious and non-infectious diseases.

CO 2: Understand various psychiatric disorders & their management.

CO 3: Explain normal pediatrics development and infections in children.

CO 4: Describe different immunization programme and pediatrics clinical conditions.

Course Content:

Topics	Hours
UNIT 1: Diseases of Skin	8
Characteristics of normal skin, abnormal changes, types of skin lesions. Conditions – Leprosy, Acne , Boil, Carbuncles, Impetigo , Infections of skin, Herpes, Urticaria, Psoriasis, Skin disorders associated with circulatory disturbances, Warts, Com. Defects in Pigmentation Psoriasis Leucoderma, Fungal infections, Alopecia, Dermatitis Eczema, Skin –Allergies, Venereal.	
UNIT 2: Psychiatry I	8
Introduction: Definition, defense mechanism, symptomatology, types, causes of mental disorders, psychosomatic disorders. Disorders: Psychosis: Schizophrenia (including paranoid), manic depressive psychosis, involvement psychosis. Psychoneurosis: Anxiety, hysteria, anxiety states, neurostasis, reactive depression, obsessive compulsive	
UNIT 3: Psychiatry II	8
Neurosis: Organic reaction- toxins, trauma & infection. Senile dementia, Mental retardation: definitions, causes manifestation and management Therapies:- Psychotherapy – Group therapy, Psychodrama, behavior modification, family therapy, play therapy, psychoanalysis, hypnosis. Drug therapy, Electro convulsive therapy	

UNIT 4: **Paediatrics**	5
Normal Growth and development of child: Motor, mental, language and social**.** Common infectious diseases in children.	
UNIT 5: Immunization Programme & Pediatrics Conditions	8
WHO schedule, different vaccinations, rationale; special consideration to various disease eradication programmes like Pulse-Polio**.** Clinical presentation, management & prevention of the following: Cerebral palsy, Poliomyelitis, Muscular dystrophy**,** Childhood rheumatism: Types, clinical presentation, & management in brief**.**	
UNIT 6: Infectious and non-infectious Conditions	8
Acute CNS infections: Clinical presentation, management & prevention of the following respiratory conditions: URI, LRI, bronchiolitis, asthma, Clinical presentation, management & prevention of the following cardiac conditions: Rheumatic heart disease, SABE, Congenital heart disease - ASD, VSD, PDA	

Suggested Readings:

Text Books:

3. Davidson, Principles and Practices of Medicine, Edward – Churchill Livingstone
4. Krishna Rao, A short Textbook of Medicine, Jaypee Brothers.

Reference Books:

5. Hutchinson's Clinical Methods, Swash- Bailliere Tindall.
6. Ahuja Niraj, A short textbook of Psychiatry, Jaypee Brothers.
7. Behrman & Vaughan, Nelson's Textbook of Paediatrics, W.B. Saunders.
8. Parthsarthy, Textbook of Paediatrics, Jaypee.

Program: Bachelor of Physiotherapy (BPT)
Semester: Sixth
Course: Leadership and Management Skills
Course Code: 40BPT.203

L	T	P	Credits
2	0	0	2

Course Learning Objective:

The Module is designed to**:**

CLO 1: Help students to develop essential skills to influence and motivate others.

CLO 2: Inculcate emotional and social intelligence and integrative thinking for effective leadership.

CLO 3: Create and maintain an effective and motivated team to work for the society.

CLO 4: Nurture a creative and entrepreneurial mindset.

CLO 5: Make students understand the personal values and apply ethical principles in professional and social contexts.

Course Outcome:

Upon completion of the course, students will be able to:

CO 1: Examine various leadership models and understand/assess their skills, strengths and abilities that affect their own leadership style and can create their leadership vision.

CO 2: Learn and demonstrate a set of practical skills such as time management, self-management, handling conflicts, team leadership, etc.

CO 3: Understand the basics of entrepreneurship and develop business plans.

CO 4: Apply the design thinking approach for leadership.

CO 5: Appreciate the importance of ethics and moral values for making of a balanced personality.

Course Content:

Topics	Hours
UNIT 1: Leadership Skills	6
a. Understanding Leadership and its Importance - What is leadership?, why leadership required, Whom do you consider as an ideal leader?; b. Traits and Models of Leadership - Are leaders born or made?, Key characteristics of an effective leader, Leadership styles, Perspectives of different leaders; c. Basic Leadership Skills - Motivation, team work, negotiation, networking	
UNIT 2: Managerial Skills	6
a. Basic Managerial Skills - Planning for effective management, How to organize teams?, Recruiting and retaining talent, Delegation of tasks, Learn to coordinate, Conflict management; b. Self-Management Skills - Understanding self-concept, Developing self-awareness, Self-examination, Self-regulation	
UNIT 3: Entrepreneurial Skills	6
a. Basics of Entrepreneurship - Meaning of entrepreneurship, Classification and types of entrepreneurship, Traits and competencies of entrepreneur; b. Creating Business Plan - Problem identification and idea generation, Idea validation, Pitch making	
UNIT 4: Innovative Leadership and Design Thinking	6

a. Innovative Leadership - Concept of emotional and social intelligence, Synthesis of human and artificial intelligence, Why does culture matter for today's global leaders; b. Design Thinking - What is design thinking?, Key elements of design thinking: discovery, interpretation, ideation, experimentation, evolution; How to transform challenges into opportunities?, How to develop human-centric solutions for creating social good?	
UNIT 5: Ethics and Integrity	6
a. Learning through Biographies - What makes an individual great?, Understanding the persona of a leader for deriving holistic inspiration, Drawing insights for leadership, How leaders sail through difficult situations?; b. Ethics and Conduct - Importance of ethics, Ethical decision making, Personal and professional moral codes of conduct, Creating a harmonious life	

Suggested Readings:

Books

• Ashokan, M. S. (2015). Karmayogi: A Bbiography of E. Sreedharan. Penguin, UK.

• Brown, T. (2012). Change by Design. Harper Business.

• Elkington, J., &Hartigan, P. (2008). The Power of Unreasonable People: How Social Entrepreneurs Create Markets that Change the World. Harvard Business Press.

• Goleman D. (1995). Emotional Intelligence. Bloomsbury Publishing India Private Limited.

• Kalam A. A. (2003). Ignited Minds: Unleashing the Power within India. Penguin Books India.

• Kelly T., Kelly D. (2014). Creative Confidence: Unleashing the Creative Potential Within Us All. William Collins.

• Kurien V., & Salve G. (2012). I Too Had a Dream. Roli Books Private Limited.

• Livermore D. A. (2010). Leading with cultural intelligence: The New Secret to Success. New York: American Management Association.

• McCormack M. H. (1986). What They Don't Teach You at Harvard Business School: Notes From A Street-Smart Executive. RHUS.

• O'Toole J. (2019) The Enlightened Capitalists: Cautionary Tales of Business Pioneers Who Tried to Do Well by Doing Good. Harpercollins.

• Sinek S. (2009). Start with Why: How Great Leaders Inspire Everyone to Take Action. Penguin

• Sternberg R. J., Sternberg R. J., &Baltes P. B. (Eds.). (2004). International Handbook of Intelligence. Cambridge University Press.

E-Resources

• Fries, K. (2019). 8 Essential Qualities That Define Great Leadership. Forbes. Retrieved 2019-02-15 from https://www.forbes.com/sites/kimberlyfries/2018/02/08/8-essentialqualities-that-define-great-leadership/#452ecc963b63.

• How to Build Your Creative Confidence, Ted Talk by David Kelly - https://www.ted.com/talks/david_kelley_how_to_build_your_creative_confidence.

• India's Hidden Hot Beds of Invention Ted Talk by Anil Gupta - https://www.ted.com/talks/anil_gupta_india_s_hidden_hotbeds_of_invention

• Knowledge@Wharton Interviews Former Indian President APJ Abdul Kalam - . "A Leader Should Know How to Manage Failure" https://www.youtube.com/watch?v=laGZaS4sdeU.

• Martin, R. (2007). How Successful Leaders Think. Harvard Business Review, 85(6): 60.

• NPTEL Course on Leadership - https://nptel.ac.in/courses/122105021/9.

L	T	P	Credits
0	0	4	2

Program: Bachelor of Physiotherapy (BPT)
Semester: Sixth
Course: Physiotherapy in Orthopaedic Conditions Practical
Course Code: 23A602P

COURSE LEARNING OBJECTIVE

CLO 1: This subject will help in gaining the skill of Orthopaedics and clinical examination and interpretation of the preoperative old cases and all the Post-Operative cases.

CLO 2: Learn the principles of interpreting a plain radiograph (be able to recognize a fracture/dislocation)

CLO 3: Learn to take decision, making ability and treat different musculoskeletal conditions.

COURSE OUTCOME

At the end of the course, candidate will able to

CO 1: Understand the basics of subjective and objective assessment to clinical diagnosis.

CO 2: Apply the basic of subjective and objective assessment to clinical diagnosis.

CO 3: Analyze the basics of musculoskeletal system and musculoskeletal examination and formulate treatment plan.

Course Content:

Topics	Hours
UNIT 1: Assessment	6
PT assessment for Orthopedic conditions	
UNIT 2: SOAP format	6
Subjective -history taking, informed consent, personal, past, medical and socioeconomic history, chief complaints, history of present illness	
UNIT 3: Pain assessment	3
intensity, character, aggravating and relieving factors, site and location	
UNIT 4: Observation	3
body built swelling, muscle atrophy, deformities, posture and gait	
UNIT 5: Palpation	3
Tenderness -grades, muscle spasm, swelling-methods of swelling assessment, bony prominences, soft tissue texture and integrity, warmth and vasomotor disturbances.	
UNIT 6: Examinations	6
ROM – active and passive, resisted isometric tests, limb length-apparent, true and segmental, girth measurement, muscle length testing-tightness, Contracture and flexibility, manual muscle testing, peripheral neurological examination dermatomes, myotomes and reflexes, special tests and functional tests.	
UNIT 7: Tests	6
Investigations and tests of different clinical presentations	
UNIT 8: Physiotherapy management	12
Physiotherapy management of the various disorders & surgeries	

UNIT 9: Practical Demonstration	9
Practical demonstration of basic principles of physiotherapy assessment, functional Assessment and application of physiotherapy in orthopeadics conditions	
UNIT 10: Prescription and Documentation	3
Prescription of home program. Documentation of case records, and follows up	
UNIT 11: Clinical Diagnosis	3
Clinical diagnosis of the presentations	

Note: Student must maintain a logbook. The duly completed logbook should be Submitted during practical examination.

L	T	P	Credits
0	0	4	2

Program: Bachelor of Physiotherapy (BPT)
Semester: Sixth
Course: Physiotherapy in Cardiopulmonary Conditions Practical
Course Code: 23A603P

COURSE LEARNING OBJECTIVE

CLO 1: Demonstrate competency in assessing vital signs, breath sounds, chest expansion, respiratory rate, pulse oximetry, and ABG interpretation.
CLO 2: Conduct thorough physiotherapy assessments for patients with common cardiopulmonary conditions (e.g., COPD, asthma, pneumonia, post-CABG, etc.).
CLO 3: Perform and justify the use of physiotherapy techniques such as percussion, vibration, postural drainage, breathing exercises, incentive spirometry, and suctioning.
CLO 4: Design and implement aerobic and respiratory exercise programs tailored for cardiopulmonary patients based on clinical status and tolerance.
CLO 5: Maintain accurate and detailed patient records, physiotherapy notes, and progress reports following professional standards.
CLO 6: Demonstrate effective communication and collaboration with healthcare teams and patients during cardiopulmonary rehabilitation.
CLO 7: Adhere to infection control, patient safety, and ethical practices while managing critically ill and cardiopulmonary patients.

COURSE OUTCOME

At the end of the course, candidate will able to
CO 1: Identify, discuss & analyze cardio-vascular & pulmonary dysfunction, based on Patho-physiological principles, & arrive at the appropriate functional diagnosis.

CO 2: Acquire the skill of evaluation & interpretation of functional capacity, using simple exercise tolerance tests, such as 6 minute walk test, symptom limited test.

CO 3: Execute the effective Physio Therapeutic measures [with appropriate clinical reasoning] with special emphasis to Breathing retraining, nebulization, humidification, bronchial hygiene, General mobilization, & Exercise conditioning.

CO 4: Execute the effective Physio therapeutic measures with appropriate clinical reasoning to improve general surgical & medical condition.

Course Content:

Topics	Hours
UNIT 1: Demonstration and assessment	15
Practical demonstration of basic principles of physiotherapy assessment, functional assessment	
UNIT 2: Application of physiotherapy	45
Application of physiotherapy in cardio – respiratory, OBG, Skin, and other medical conditions	

Note: Student must maintain a logbook. The duly completed logbook should be submitted during practical examination.

Program: Bachelor of Physiotherapy (BPT)
Semester: Sixth
Course: PT- Clinicals – II
Course Code: 23A606P

L	T	P	Credits
0	0	16	8

COURSE LEARNING OBJECTIVE

CLO 1: The student will learn approach to the patient, collection of demographic data, art of history taking and bed side/OPD manners in relation to patients.
CLO 2: The student will learn proper diagnosis of each conditions of patient.
CLO 3: The student will learn physiotherapeutic management of different cases in OPD.

COURSE OUTCOME

At the end of the course, candidate will able to

CO 1: Apply the principles of basic anatomical, physiological and biomechanical concepts to clinical settings for assessment and diagnosis of a condition.

CO 2: Analyze the special tests for various tissues and systems of the body.

CO 3: Identify the signs & symptoms in different diseases and dysfunctions and elicited responses to various stimuli.

CO 4: Create an appropriate assessment of patient for deciding the appropriate management.

Course Content:

Topics	Hours
UNIT 1: Clinical Posting	120
The students will be posted in different departments in various setups. According to their planned curriculum.	

Note:

1. Every student will be asked to maintain a separate logbook consisting of minimum thirty case histories. The duly completed logbook should be submitted during practical examination.
2. Exam shall be conducted and student will be assessed according to:-
    - Bedside case presentations and case discussions
    - Lab sessions consisting of evaluation and assessment methods on student models, treatment techniques and practice sessions.

SEVENTH SEMESTER

L	T	P	Credits
3	0	0	3

Program: Bachelor of Physiotherapy (BPT)
Semester: Seventh
Course: Rehabilitation & Physiotherapy Ethics
Course Code: 23A701

COURSE LEARNING OBJECTIVE

CLO 1: This Subject will help to impart ethical knowledge related to physiotherapy
CLO 2: to learn the broader aspect of Community based rehabilitation.
CLO 3: to learn law and management skills related to hospital and clinic

COURSE OUTCOME

At the end of the course, candidate will able to

CO 1: Understand the concepts of determinants of health, well-being, disease prevention and control and summarizing about epidemiology, different levels of public health administration and health programs in India.
CO 2: Describe the role of various voluntary organizations, NGOs in community health
CO 3: Describe conceptual framework of rehabilitation with emphasis on roles of rehabilitation team members and community-based rehabilitation & outreach programme to rehabilitate persons with disabilities living in rural areas
CO 4: Analyze about architectural barrier and possible modifications with reference to common disabling conditions and activities of daily living.
CO 5: Compare and contrast the concept of professionalism and code of professional ethics and describe the salient features of national and international code of ethics related to health sciences as well as discuss the legal frame work of Physiotherapy practice.

Course Content:

Topics	Hours
UNIT 1: Introduction to rehabilitation	8

Introduction of Rehabilitation & History, Epidemiology of disability (Impairment, disability, phases of disability process etc.); principles of Rehabilitation & concept of team approach with rolls of each individual participant; organization of Rehabilitation unit; disability prevention evaluation & principles of Rehabilitation Management; role of Physiotherapy in Rehabilitation (Preventive, treatment & restoration); brief outline of Communication disorder & its implications on Rehabilitation process; brief outline of psychosocial & vocational aspects of Rehabilitation; introduction to Occupational therapy; activities of daily living, functional assessment & training for functional independence.	
UNIT 2: Community Based Rehabilitation	8
Brief outline of basic community medicine with special reference to community based Rehabilitation; infrastructure and role of CBR; assessment of disability in rural & urban setups; Health care delivery system & preventive measures with specific reference to disabling conditions; Community education program; application of Physiotherapy skills at community level with special reference to the need at rural level;	
UNIT 3: Voluntary Organizations in CBR, disability, prevention and rehabilitation	8
Charitable Organizations, Role of Physiotherapy in CBR: Screening for disabilities, Prescribing exercise program, Prescribing and devising low cost locally available assistive aids; Modifications physical and architectural barriers for disabled, Disability prevention, Strategies to improve ADL, Rehabilitation program for various neuro-musculoskeletal and cardiothoracic disabilities.	
UNIT 4: Voluntary health agencies	7
National level and International NGO's, Multilateral and Bilateral agencies. International Health Organizations: WHO, UNICEF, UNDP, UNFPA, FAO, ILO, World bank, USAID, SIDA, DANIDA, Rockfeller, Ford foundation, CARE, RED CROSS. National District Level Rehabilitation Program: Primary rehabilitation unit, Regional training center, District rehabilitation center, Primary Health center, Village rehabilitation worker, Anganwadi worker.	
UNIT 5: Ethics and Law	7
Concepts of morality, Ethics & Legality - rules of professional conduct & their Medico-legal & moral implications - The need of Council Act for Physiotherapy; Constitution & Functions of the Indian association of Physical therapy; Functioning of the World Confederation of Physical therapy [W.C.P.T.] & its various branches-Special Interest groups [brief Role of W.H.O.& WCPT;	
UNIT 6: Evidence Based Practice, management and administration	7
Definitions, Evidence Based Physiotherapy Practice; Management studies related to – local health care organization management & structure- planning delivery with quality assurance & funding of service delivery information technology -Time management - career development in Physiotherapy; Administration - principles-based on the Goal & functions - at large hospital set up/domiciliary services/private clinic /academic	

Suggested Readings:

Text Books:

1. S. Sunder, Textbook of Rehabilitation, Jaypee.

Reference Books:

1. Sullivan, Schmitz Physical rehabilitation-assessment & treatment, F.A Davis.

Program: Bachelor of Physiotherapy (BPT)
Semester: Seventh
Course: Physiotherapy in Neurological Conditions - I
Course Code: 23A702

L	T	P	Credits
4	0	0	4

COURSE LEARNING OBJECTIVE

CLO 1: the student should be able to identify disabilities due to neurological dysfunction and demonstrations,
CLO 2: Plan and set treatment goals
CLO 3: Apply the skills gained in exercise therapy and electrotherapy in these clinical situations to restore neurological function

COURSE OUTCOME

At the end of the course, candidate will able to
CO 1: Explain the neuroanatomy and physiology.
CO 2: Correlate the neuroanatomy with various UMN and LMN disorders.
CO 3: Apply the principles of various neurological approaches for planning the management of a neurological patient.
CO 4: Explore the assessment and neurological techniques for the management of spinal cord injury patient.
CO 5: Classify various speech disorders.

Course Content:

Topics	Hours
UNIT 1. Review of basic Neuro	9
Anatomy and Physiology. Physiotherapy evaluation of a neurological patient, electro diagnostic procedures,	
UNIT 2: Interpretations and prognosis	6
Interpretations and prognosis in different neurological conditions, Upper and Lower motor neuron lesions	
UNIT 3: Principles of physiotherapy programs	15
Principles of physiotherapy programs, reeducation and retraining techniques in neurological conditions, approaches like: Bobath's / neuro developmental therapy, Rood's approach,	
UNIT 4: Neurological technique & Aphasia	15
PNF**,** Vojta techniques, biofeedback, Brunnstorm movement therapy, Motor Relearning programming, sensory integration therapy. Disturbance of speech and aphasia	
UNIT 5. Spinal cord injury	6
Review of anatomy and physiology, Physiotherapy Assessment of Spinal cord injury.	
UNIT 6: Principles of Physiotherapy	9
UNIT 6: Principles of Physiotherapy at various stages of Spinal cord injury Rehabilitation goals and ADL training	

Suggested Readings:

Text Book:

1. Cash's Text book for Physio Therapy in Neurological disorders – Jaypee Brothers publication
2. Practical Physical Therapy By Margaret Hollis
3. Therapeutic Exercise By Carolyn Kisner & Colby
4. Physical rehabilitation By Susan. B.O ' Sullivan
5. Tidy's Physiotherapy By Stuart Potter
6. Neurological Rehabilitation By Darcy Umphred
7. " Right in the middle of the stroke " By Patricia Davis

Reference Book:

1. Therapeutic Exercises By Basmajiian -5th edition
2. Physical Rehabilitation By Krusen
3. Brain's disorder s of Nervous System

Program: Bachelor of Physiotherapy (BPT)
Semester: Seventh
Course: Physiotherapy in Sport Conditions – I
Course Code: 23A703

L	T	P	Credits
4	0	0	4

COURSE LEARNING OBJECTIVE

CLO 1: The student will be able to conduct a safe and effective treatment of patients with orthopedic and sports conditions.
CLO 2: this subject will help students to Pre exercise evaluation
CLO 3: will help students to identify different sports injuries.

COURSE OUTCOME

At the end of the course, candidate will able to

CO 1: Understand the knowledge, concepts and biomechanics of various sports injuries.
CO 2: Apply guideline for diet, prevention of injuries and pre sports training.
CO 3: Evaluate and plan management and rehabilitation protocols for specific injuries on-field and off-field.
CO 4: Describe the effect of exercise in different system.

Course Content:

Topics	Hours
UNIT 1: Introduction	12
Pre-exercise evaluation 2. Diet and nutrition Measurement of fitness components and sports skills –muscular strength, muscular endurance, Measurement of flexibility, Determination exercise endurance	
UNIT 2: Physiological effects of exercise on body systems	9
Muscular system, Endocrine system, Cardio-respiratory system, Nervous system	
UNIT 3: Sports injuries - Spine	12
PIVD, Kissing spine, cervical whiplash injuries, facet joint	
UNIT 4: Sports injuries - Hip	9
Muscle strain, piriformis syndrome, ITB syndrome, osteitis pubis,	
UNIT 5: Sports injuries - Knee	9
Menisci, cruciate, collateral, osteochondritis, chondromalacia patellae, biceps femoris tendonitis, swimmers knee, patello-femoral pain syndrome	
UNIT 6: Sports injuries - Leg, ankle, head & face	9
Leg & ankle – shin splint, achillis tendonitis & rupture, TA bursitis, ankle sprain, plantar fascitis, turf toe syndrome, Head & face – maxillofacial injuries, helmet compression syndrome.	

Suggested Readings:

Text Books:

1. Clinical sport medicine By Peter Brukner and Karim Khan
2. Physical therapy in sport by Journal Elsevier
3. Physical Rehabilitation in injured Athletes by Andrews Harrelson Wilk

Reference Books:

1. Sport and physical therapy – Bernhardt Donna, Churchill Livingstone,
2. Cash, M. Sport and Remedial Massage therapy. Londan: Edbury, 1996

Program: Bachelor of Physiotherapy (BPT)
Semester: Seventh
Course: Research Methodology & Biostatistics
Course Code: 23A704

L	T	P	Credits
4	0	0	4

COURSE LEARNING OBJECTIVE

Upon successful completion of this course, the students will be able to:

CLO 1 - Understand the Fundamentals of Research
CLO 2 - Develop Research Skills
CLO 3 - Apply Bio statistical Methods
CLO 4 - Interpret and Analyze Data
CLO 5 - Use Research Tools Effectively
CLO 6 - Promote Evidence-Based Practice
CLO 7 - Communicate Scientific Knowledge

COURSE OUTCOME

At the end of the course, candidate will able to

CO 1: Define the basic concepts and ethical considerations of research and its significance in physiotherapy practice.
CO 2: Formulate research questions, hypotheses, and design appropriate research studies including qualitative and quantitative methods.
CO 3: Describe and apply various sampling methods, data collection tools, and research instruments used in clinical research.
CO 4: Apply descriptive and inferential statistical techniques to analyze and interpret research data.

Course Content:

Topics	Hours
UNIT 1: **Introduction to research**	12
Importance of research in clinical practice, objectives of Research, Types of Research, Research Approaches Research: Scope and significance –Research Process, Characteristics of good research, Criteria of good Research, Problem Encountered by Researchers in India.	
UNIT 2: **Research Methodology**	18
Different types of sample design Research question including literature review. Measurement: Principles of measurement, reliability and validity Research Problem:-Definition, Selecting the Problem, Necessity of Defining the problem, Techniques Involved in Defining a Problem .Basic Principles of Research Design , Measurement, Reliability and Validity	
UNIT 3: Research Designs and Sampling	

Definition, Need, Principle and Different Types of Research Design, Sampling Design and its types	
UNIT 4: Introduction to Biostatistics	8
Definitions- Scope of Biostatistics- Variables in Research (Dependent and Independent), Method of Data collection, Processing of Data	
UNIT 5: Basic Biostatistics	12
Graphical and diagrammatic representation Data, Measures of central tendency – Arithmetic mean, median and mode. Measures of dispersion, Range, Mean Deviation, standard deviation, Normal Distribution of Curve, Measure of Skew Ness and Kurtosis Coefficient of variation	
UNIT 6: Biostatistical tests	10
Hypothesis Testing, Level of Significance-Types of Error, Test for Normality, Parametric and Non Parametric Test.	

Suggested Readings:

Text Books:

1. Handbook of Research In Physical Therapy. CE Bork
2. Physical Therapy Research: Principles and Application. E Domholdt

Reference Book:

1. Research Methodology For Physical Therapists. C Hicks

Program: Bachelor of Physiotherapy (BPT)
Semester: Seventh
Course: Soft Skills & Interpersonal Communication
Course Code: 40BPT.352

L	T	P	Credits
2	0	0	0

COURSE LEARNING OBJECTIVE

CLO 1: To develop inter personal skills and be an effective goal oriented team player.
CLO 2: To develop professionals with idealistic, practical and moral values.
CLO 3: To develop communication and problem solving skills.
CLO 4: To re-engineer attitude and understand its influence on behavior.

Course Outcome:

CO 1: Effectively communicate through verbal/oral communication and improve the listening Skills.
CO 2: Write precise briefs or reports and technical documents.
CO 3: Actively participate in group discussion / meetings / interviews and prepare & deliver presentations.
CO 4: Become more effective individual through goal/target setting, self-motivation and practicing creative thinking.
CO 5: Function effectively in multi-disciplinary and heterogeneous teams through the knowledge of team work, Inter-personal relationships, conflict management and leadership quality.

Course Content:

Topics	Hours
UNIT 1: Self Analysis	7
Introduction to Soft Skills and Hard Skills, Importance of Soft Skills, Attributes Regarded as Soft Skills, Identifying and improving your Soft Skills, Art of Negotiation; Stage Fright; Self Discovery, Importance of knowing oneself, Process of knowing oneself, SWOT Analysis, Benefits of SWOT analysis, SWOT Analysis, Self Esteem, Ways to improve Self Esteem, Aristotle on Self-Gender and Self, Feminist Self, Escaping the Self; Self Development; Developing Positive Attitude and Self Confidence, Forming Values	
UNIT 2: Goal Setting and Career Planning	8
Wish List, SMART Goals, Blue print for Success, Short term, Long Term, Life Time Goals; Art of Listening, Art of Reading, Art of Speaking, Art of Writing, writing E-mail; Motivation Skills, Personality Development, Improving Perception; Time Management, Stress Management, Conflict Handling; Problem Solving and Decision Making, adaptability.	
UNIT 3: Effective Communication	7

Communication Skills, Concept/Meaning, Definition; Types of Communication, Process of Communication, stages of Communication; Difference between General and Technical Communication; Barriers to Communication; Communication Network; 7 C's of Communication; Verbal & non-verbal Communication	
UNIT 4: Interpersonal Skills	8
Interpersonal Communication, Basic Skill set; Effective Interpersonal Communication in Organization; Team Building, Communicating in a Team; Intercultural Communication; Leadership traits through Communication; Communicating assertively; Presentation Skills	

Suggested Readings:

1. Covey Sean Seven Habits of Highly Effective Teens, New York, Fireside Publishers, 1998.
2. Carnegie Dale, How to win Friends and Influence People, New York: Simon & Schuster, 1998.
3. Thomas A Harris, I am ok, You are ok, New York-Harper and Row,1972
4. Dr. K. Alex Soft Skills, S. Chand

Program: Bachelor of Physiotherapy (BPT)
Semester: Seventh
Course: Physiotherapy in Neurological Conditions – I Practical
Course Code: 23A702P

L	T	P	Credits
0	0	4	2

COURSE LEARNING OBJECTIVE

CLO 1: This subject will help to integrate the knowledge neurology.
CLO 2: Learn about the neurosurgery with skills to apply these in clinical situations of dysfunction.
CLO 3: Learn how to handle the neurological pathology condition.

COURSE OUTCOME

At the end of the course, candidate will able to

CO 1: Describe the basic approach and perform a general examination of a neurological patient.
CO 2: Conduct assessment and clinical examination of consciousness, memory, speech and language, cranial nerves (I–XII), motor system, movement disorders, coordination and gait, sensory system, autonomic nervous system, and neurovascular system.
CO 3: Perform and interpret clinical examination findings for the assessment of various neurological problems.

Course Content:

Topics	Hours
UNIT 1: General Examination	15
Basic approach and general examination of neurological patient	
UNIT 2: Clinical Examination	24
Assessment, Clinical examination and testa of the following: Consciousness, memory, Speech and Language, Cranial nerve I - XII, Motor system, Movement disorders, Co-ordination and gait, sensory system, Autonomics nervous system, Neurovascular system	
UNIT 3: Assessment	21
Clinical examination of all neurological problems	

Note: Student must maintain a logbook. The duly completed logbook should be Submitted during practical examination.

Program: Bachelor of Physiotherapy (BPT)
Semester: Seventh
Course: Physiotherapy in Sport Conditions – I Practical
Course Code: 23A703P

L	T	P	Credits
0	0	4	2

COURSE LEARNING OBJECTIVE

CLO 1: Learn how to take History from patient
CLO 2: Gain knowledge on Assessment.
CLO 3: Learn about Clinical diagnosis based on the presentations and investigations
CLO 4: Physiotherapy management of the various disorders & surgeries.

COURSE OUTCOME

At the end of the course, candidate will able to

CO 1: Assess sport injury patient

CO 2: Diagnose the condition based upon history and clinical presentation

CO 3: Correlate laboratory reports & clinical findings and treat condition

Course Content:

The students will be shown patients of relevant diseases and disorders for

Topics	Hours
UNIT 1: History	6
History taking of the conditions of patients	
UNIT 2: Assessment	21
Assessment of the clinical condition	
UNIT 3: Clinical Diagnosis	9
Clinical diagnosis of the presentations	
UNIT 4: Investigation and Tests	15
Investigation and tests of different clinical presentations	
UNIT 5: Physiotherapy management	9
Physiotherapy management of various disorders & surgeries	

Note: Student must maintain a logbook. The duly completed logbook should be Submitted during practical examination.

Program: Bachelor of Physiotherapy (BPT)
Semester: Seventh
Course: PT - Clinicals – III
Course Code: 23A705P

L	T	P	Credits
0	0	16	8

COURSE LEARNING OBJECTIVE

CLO 1: Students will be posted in rotation in the following areas/wards.
The students will be clinically trained to provide physiotherapy care for the patients under supervision.
CLO 2: They will be trained on bed side approach, patient assessment, performing special tests, identifying indications for treatment, ruling out contraindications, decision on treatment parameters, dosage and use relevant outcome measures under supervision.
CLO 3: They will be trained on Evidence based practice.

COURSE OUTCOME

At the end of the course, candidate will able to

CO 1: Apply the principles of basic anatomical, physiological and biomechanical concepts to clinical settings for assessment and diagnosis of a condition.
CO 2: Analyze the special tests for various tissues and systems of the body.
CO 3: Identify the signs & symptoms in different diseases and dysfunctions and elicited responses to various stimuli.
CO 4: Create an appropriate assessment of patient for deciding the appropriate management.

Course Content:

Topics	Hours
UNIT 1: Clinical Posting	120
The students will be posted in different departments in various setups. According to their planned curriculum.	

Note:

1. Every student will be asked to maintain a separate logbook consisting of minimum thirty case histories. The duly completed logbook should be submitted during practical examination.
2. Exam shall be conducted and student will be assessed according to:-
    - Bedside case presentations and case discussions
    - Lab sessions consisting of evaluation and assessment methods on student models, treatment techniques and practice sessions.

EIGHTH SEMESTER

Program: Bachelor of Physiotherapy (BPT)
Semester: Eighth
Course: Prosthetics & Orthotics
Course Code: 23A801

L	T	P	Credits
4	0	0	4

COURSE LEARNING OBJECTIVE

CLO 1: This subject makes students knowledgeable in the area of Prosthetic and Orthotics clinical conditions and
CLO 2: learn to analyze conditions by means of appropriate measuring instruments
CLO 3: Gain knowledge how to assess for Orthotics and Prosthetic prescription.

COURSE OUTCOME

At the end of the course, candidate will able to
CO 1: Differentiate different types of Prosthetics & Orthotics and its fittings.
CO 2: Apply splint, tape, and bandage as per the demand of device.
CO 3: Analyze and manage different Prosthetics and Orthotics device of upper limb, lower limb and spine.

Course Content:

Topics	Hours
UNIT 1: Introduction to Orthotics	12
Introduction to surgical anatomy and various pathological deviations with respect to brace fitting. Types of Prosthetic and Orthotic devices, Rationale of prescribing Prosthetic and Orthotic devices; Techniques used in splinting, taping and bandaging; Biomechanical implications of designing of prosthesis and orthosis.	
UNIT 2: Introduction to Prosthetics	12
Prosthetic assessment and management, Orthotic assessment & management; Checkout, usage advice, precautions, and follow-up. Care of prosthesis & orthosis Methods of donning & doffing, Psychological aspect of orthotic and prosthetic application.	
UNIT 3: Upper limb orthosis & Prosthetics	9
Shoulder and arm orthosis, elbow orthosis, wrist orthosis, hand orthosis, tenodesis orthosis, finger orthosis, Static and dynamic splints, C-splint, Short opponens splint, long opponens splint, cock- up splint, gutter splint, bunell knuckle bender splint, reverse knuckle bender splint,	
UNIT 4: Lower limb orthosis & Prosthetics	9

Material and fabrication of lower limb orthosis, AFO, KAFO, HKAFO. Foot orthosis; Assessment of Gait post orthotic (Lower Limb) fitting; General principles of orthosis, contraindications to orthosis, Knowledge of various component of orthosis,	
UNIT 5: Spinal orthosis	9
cervical orthosis, Halo orthosis Head cervical-thoracic orthosis, SOMI brace, Thoraco-lumbar sacral orthosis, CASH orthosis, Taylor brace, Milwaukee brace, lumbosacral orthosis, lumbo sacral corset, sacral orthosis, Walking aids and wheel chairs: Introduction to mobility aids, prescription, usage advice, and follow-up.	
UNIT 6: Prosthotics	9
Amputation and Prosthetics, Knowledge of various component of prosthesis; Classification of prosthesis, Power system used, materials used, Upper limb prosthesis- components, Above Elbow prosthesis, Below Elbow prosthesis, Prosthetic hands. Lower limb prosthesis-components, syme's prosthesis, PTB prosthesis, prosthesis for transfemoral amputation, prosthesis for transtibial amputation, prosthesis for hip disarticulation, stubbies Assessment of Gait post Prosthetic fitting; Prescription and designing of footwear and modifications.	

Suggested Readings:

Text Books:

4. Clinical sport medicine By Peter Brukner and Karim Khan
5. Physical therapy in sport by Journal Elsevier
6. Physical Rehabilitation in injured Athletes by Andrews Harrelson Wilk

Reference Books:

3. Sport and physical therapy – Bernhardt Donna, Churchill Livingstone,
4. Cash, M. Sport and Remedial Massage therapy. Londan: Edbury, 1996

Program: Bachelor of Physiotherapy (BPT)
Semester: Eighth
Course: Physiotherapy in Neurological Conditions - II
Course Code: 23A802

L	T	P	Credits
4	0	0	4

COURSE LEARNING OBJECTIVE

CLO 1: Student will learn about assessment of neurology patient
CLO 2: Gain knowledge about disabilities and dysfunction
CLO 3: Learn about how to set goals and plan treatment.

COURSE OUTCOME

At the end of the course, candidate will able to

CO 1: Assess, identify, and analyze neurological disorders such as stroke, meningitis, encephalitis, Parkinson's disease, cerebellar lesions, multiple sclerosis, and facial palsy, and plan appropriate physiotherapeutic management for these conditions.

CO 2: Explain the etiology, classification, clinical features, complications, and management (medical, surgical, and physiotherapeutic) of cerebral palsy, and design individualized home programs with emphasis on carrying techniques and post-surgical care.

CO 3: Assess and plan physiotherapeutic management for neurological conditions including motor neuron disease, disseminated sclerosis, transverse myelitis, poliomyelitis, syringomyelia, spina bifida, neuropathies, neuromuscular junction disorders, and myopathies.

CO4: Evaluate, diagnose, and manage peripheral nerve injuries, including understanding their classification, functional assessment, prognosis, and physiotherapeutic interventions following surgical resection or repair.

CO 5: Analyze the types, mechanisms, clinical features, and complications of head injury, and apply physiotherapy principles for immediate and postoperative therapeutic management.

CO 6: Plan and implement post-surgical physiotherapy management for neurosurgical procedures such as craniotomy, shunt placement, space-occupying lesion (SOL) resection, surgical treatment of spasticity, cervical cord decompression, brain tumors, traumatic brain injury, and reconstructive surgery for poliomyelitis and leprosy.

Course Content:

Topics	Hours
UNIT 1: Assessment and principles of therapeutic management of following neurological conditions I	18
Stroke, meningitis, encephalitis, Parkinson's disease, cerebellar lesions, Multiple Sclerosis, facial palsy.	
UNIT 2: Cerebral palsy	12
Definition, etiology, classification, clinical features, complications, deformities, medical and surgical management and home program with special emphasis on carrying techniques. PT management after surgical corrections in CP.	

UNIT 3: **Assessment and principles of therapeutic management of following neurological conditions II** Motor neuron disease, Disseminated sclerosis, transverse myelitis, polio, syringomyelia, spina bifida, Neuropathies, neuromuscular junction disorders and myopathies.	9
UNIT 4: Peripheral nerve injuries, surgical resection & repair Classification & types, Functional assessment, investigation, diagnosis & prognosis, Physiotherapeutic management, Poly neuropathy	6
UNIT 5: Head injury Types and Mechanisms of head injury, Clinical features, potential complications, Physiotherapy principles of immediate and postoperative therapeutic management.	6
UNIT 6: **Neurosurgery** Post-surgical Physical therapy in neurosurgical procedures – craniotomy, shunts, SOL resection, surgical treatment of spasticity, cervical cord decompression, Brain tumors, Traumatic brain injury**,** Physiotherapy principles of immediate and postoperative therapeutic management including reconstructive surgery of poliomyelitis and Leprosy.	9

Suggested Readings:

Text Books:

8. Cash's Text book for Physio Therapy in Neurological disorders – Jaypee Brothers publication
9. Practical Physical Therapy By Margaret Hollis
10. Therapeutic Exercise By Carolyn Kisner & Colby
11. Physical rehabilitation By Susan. B.O ' Sullivan
12. Tidy's Physiotherapy By Stuart Potter

Reference Books:

4. Therapeutic Exercises By Basmajiian -5th edition
5. Physical Rehabilitation By Krusen
6. Brain's disorder s of Nervous System

Program: Bachelor of Physiotherapy (BPT)
Semester: Eighth
Course: Physiotherapy in Sport Conditions -II
Course Code: 23A803

L	T	P	Credits
4	0	0	4

COURSE LEARNING OBJECTIVE

CLO 1: Student will learn pre training evaluation
CLO 2: Gain knowledge about nutrition and diet plan
CLO 3: Learn about regional sports injuries

COURSE OUTCOME

At the end of the course, candidate will able to

CO 1: Understand the knowledge, concepts and biomechanics of various sports injuries.
CO 2: Apply guideline for prevention of injuries and pre sports training.
CO 3: Evaluate and plans management and rehabilitation protocols for specific injuries on-field and off-field.
CO 4: Design exercise for specific gender or age group.

Course Content:

Topics	Hours
UNIT 1: Region wise Sports injuries I	14
Shoulder – instability, rotator cuff injury, biceps tendonitis and rupture, pectoralis major rupture, scapular dyskinesis and acromio-clavicular joint injuries	
UNIT 2: Region wise Sports injuries II	14
Elbow – tennis elbow, golfer's elbow, Wrist and hand – carpal tunnel syndrome, gamekeeper's thumb.	
UNIT 3: General principles in sports	12
Principles of injury prevention, Principles of training & Rehabilitation in sports injuries.	
UNIT 4: Sports in Special age groups I	10
Female athletic triad, Younger athlete- Musculoskeletal problems, management, children with chronic illness and nutrition.	
UNIT 5: Sports in Special age groups II	10
Older athlete- Physiological changes with aging, benefits, risks of exercise in elderly, exercise prescription guidelines for elderly.	

Suggested Readings:

Text Books:

1. Clinical sport medicine By Peter Brukner and Karim Khan.
2. Physical therapy in sport by Journal Elsevier.
3. Physical Rehabilitation in injured Athletes by Andrews Harrelson Wilk .

Reference Books:

1. Sport and physical therapy – Bernhardt Donna, Churchill Livingstone.
2. Cash, M. Sport and Remedial Massage therapy. Londan: Edbury, 1996.

Program: Bachelor of Physiotherapy (BPT)
Semester: Eighth
Course: Seminar in Executive Communication
Course Code: 40BPT.401

L	T	P	Credits
2	0	0	0

COURSE LEARNING OBJECTIVE:

CLO 1: An average student acquires basic skills required for a cherished job.

CLO 2: Their appreciative personality development becomes a value added attribute in their professional sphere.

CLO 3: The course enhances communication, leadership and teamwork skills; and personal development skills using practical approach and exposure of students to the realities of the world

CLO 4: To put greater emphasis on development of non-technical skills, such as flexibility, leadership and good communication.

COURSE OUTCOME

At the end of the course, candidate will able to

CO 1: Understand the importance of effective communication in business Effective Communication in Business.
CO 2: Differentiate between different methods of communication Methods of Communication.
CO 3: Understand the importance of ethical communication Ethics in Business Communication
CO 4: Understand the importance of staying connected with colleagues, other professionals and customers in the digital age.

Course Content:

Topics	Hours
UNIT 1: Workshop & Activity	30
Debate, Extempore, Group Discussion, Panel Discussion, Presentation-Paper & Oral, Reports: Survey Report, Project Report, Case Study	

Suggested Readings:

Books:

- Monippally, Matthukutty. M. 2001. Business Communication Strategies. 11th Reprint. Tata McGraw-Hill. New Delhi
- Swets, Paul. W. 1983. The Art of Talking So That People Will Listen: Getting Through to Family,Friends and Business Associates. Prentice Hall Press. New York
- Lewis, Norman. 1991. Word Power Made Easy. Pocket Books
- Sen , Leena .Communication Skills ; Eastern Economy Edition
- Ghanekar , Dr. Anjali . Essentials of Business Communication Skills ; Everest Publishing House
- David Green . Contemporary English Grammar, Structure & Composition ; MacMillan
- Dictionary; Oxford
- Dictionary ; Longman

Program: Bachelor of Physiotherapy (BPT)
Semester: Eighth
Course: Physiotherapy in Neurological Conditions – II Practical
Course Code: 23A802P

L	T	P	Credits
0	0	4	2

COURSE LEARNING OBJECTIVE
CLO 1: Learn about neurological assessment
CLO 2: Gain knowledge on functional assessment

COURSE OUTCOME
At the end of the course, candidate will able to
CO 1: Demonstrate the basic principles and techniques of physiotherapy assessment, including functional assessment skills.
CO 2: Apply physiotherapy interventions effectively in the management of various neurological conditions.

Course Content:

Topics	Hours
UNIT 1: Demonstration and assessment	15
Practical demonstration of basic principles of physiotherapy assessment, functional assessment	
UNIT 2: Application of physiotherapy	45
Application of physiotherapy in neurological conditions	

Note: Student must maintain a logbook. The duly completed logbook should be Submitted during practical examination.

Program: Bachelor of Physiotherapy (BPT)
Semester: Eighth
Course: Physiotherapy in Sport Conditions – II Practical
Course Code: 23A803P

L	T	P	Credits
0	0	4	2

COURSE LEARNING OBJECTIVE

CLO 1: Learn about Assessment of sport injury patients.
CLO 2: Gain knowledge on Diagnose the condition based upon history and clinical presentation.
CLO 3: Learn about clinical Correlate laboratory reports

COURSE OUTCOME

At the end of the course, candidate will able to

CO 1: Assess sport injury patient.

CO 2: Diagnose the condition based upon history and clinical presentation.

CO 3: Correlate laboratory reports & clinical findings and treat condition.

Course Content:

The students will be shown patients of relevant diseases and disorders for

Topics	Hours
UNIT 1: History	6
History taking of the conditions of patients	
UNIT 2: Assessment	21
Assessment of the clinical condition	
UNIT 3: Clinical Diagnosis	9
Clinical diagnosis of the presentations	
UNIT 4: Investigation and Tests	15
Investigation and tests of different clinical presentations	
UNIT 5: Physiotherapy management	9
Physiotherapy management of various disorders & surgeries	

Note: Student must maintain a logbook. The duly completed logbook should be submitted during practical examination.

Program: Bachelor of Physiotherapy (BPT)
Semester: Eighth
Course: PT Clinicals - IV
Course Code: 23A805P

L	T	P	Credits
0	0	16	8

COURSE LEARNING OBJECTIVE

CLO 1: Students will be posted in rotation in the following areas/wards. The students will be clinically trained to provide physiotherapy care for the patients under supervision.
CLO 2: They will be trained on bed side approach, patient assessment, performing special tests, identifying indications for treatment, ruling out contraindications, decision on treatment parameters, dosage and use relevant outcome measures under supervision.
CLO 3: They will be trained on Evidence based practice.

COURSE OUTCOME

At the end of the course, candidate will able to

CO 1: Applying the principles of basic anatomical, physiological and biomechanical concepts to clinical settings for assessment and diagnosis of a condition.

CO 2: Analyzing the special tests for various tissues and systems of the body.

CO 3: Identifying the signs & symptoms in different diseases and dysfunctions and elicited responses to various stimuli.

CO 4: Creating an appropriate assessment of patient for deciding the appropriate management.

Course Content:

Topics	Hours
UNIT 1: Clinical Posting	120
The students will be posted in different departments in various setups. According to their planned curriculum. Students have to do a project work on any topic related to following department Physiotherapy OPD, Neurology, Neurosurgery & Neuro ICU, Community-PHC, Orthopedics, General Medicine & MICU, General Surgery & CTS ICU, Developmental Pediatrics & Child Guidance Clinic, OBG, Geriatric – Old Age Homes, Industrial Visits - Ergonomics	

Note: Student must maintain a logbook. The duly completed logbook should be submitted during practical examination.

Program: Bachelor of Physiotherapy (BPT)
Semester: Eighth
Course: Project
Course Code: 23A806P

L	T	P	Credits
0	0	4	2

COURSE LEARNING OBJECTIVE

CLO 1: Student will learn about the research steps
CLO 2: Student will learn different ways to study a case or condition
CLO 3: They will be trained on Evidence based practice.

COURSE OUTCOME

At the end of the course, candidate will able to

CO 1: Take part in research activities
CO 2: Participate in different forms of research study
CO 3: Practice Physiotherapy which is evidence based and research supported.

Course Content:

Topics	Hours
UNIT 1: Project Work	60
The project may be a case study or of recent technique or literature reviews and etc. to make the student to have research mind and to facilitate for higher studies.	

Note: Project will be a clinical assignment on given topic or condition. This may be done in the form of a literature review or a small research project. This will give the student a practical background on research methods and recent advances. This will be done during internship and will be done as a group work of 4-5 students on a given research title. Research Proposal for this project should be approved before fourth year B. Physiotherapy University Examination. Project Guide will be assigned by Principal/ Dean/ HOD to students. A Research Advisory Committee [RAC] will be formed having three senior-most faculty members of PHYSIOTHERAPY. This RAC will decide whether the Project is accepted / rejected or it requires corrections. Student will be allotted 1 Hour daily for doing their 'Project Work' schedule till 100 Hours are completed.

DEPARTMENTAL ELECTIVE

FIFTH SEMESTER

Program: Bachelor of Physiotherapy (BPT)
Semester: Fifth
Course: Medical Record Keeping
Course Code: 23ADE01

L	T	P	Credits
2	0	0	2

COURSE LEARNING OBJECTIVE

CLO 1: Student will learn benefits of medical record keeping.
CLO 2: Student will gain knowledge about consumer complaints and how to respond in such situation
CLO 3: Get an idea about regulatory board, laws and nature of court hearing
CLO 4: student will get idea about common human error, creativity in record keeping.
CLO 5: Student will get to know about pros and cons of electronic records

COURSE OUTCOME

At the end of the course, candidate will able to
CO 1: Explain benefits of medical record keeping, functions of investigation board, law etc**.**
CO 2: Explain risk of omission of multi-page medical record.
CO 3: Identify common medical record error and make medical record keeping fun activity.
CO 4: Describe pros and cons of electronic records

Course Content:

Topics	Hours
UNIT 1: Introduction to Medical Records	6
Identifies the six reasons medical records need to be viewed as a key ingredient of each practice's most valuable assets · Articulates how entries generate presumptions that what was entered got done and what was not entered did not · Describes the doctors and practices that are most vulnerable to State Board investigations, intervention and discipline	
UNIT 2: How Board Investigations of Alleged Violations Work	3
Εξπλαινσ τηε προχεσσ Στατε Βοαρδσ πυρσυε ασ τηεψ ινωεστιγατε χονσυμερ χομπλαιντσ • Λεαρν ηοω το ρεσπονδ το χομπλαιντσ ωιτηουτ αλιενατινγ τηε χομπλαινερσ	
UNIT 3: Going to Court is NOT Fun – Paw & Order: The Profession on Trial	2
Γο το χουρτ ωιτη Δρ. Οβερμεψερ ανδ σεε φιρστ–ηανδ τηε ιμπορτανχε οφ γοοδ ρεχορδκεεπινγ αφτερ ωιεωινγ τηε ονλψ ωετεριναρψ ωερσιον οφ τηε τελεωισιον σηοω Λαω & Ορδερ	
UNIT 4: What Gets Entered and What Does Not – Case Example	2

Identify and explain the risks from the omissions in a multi-page medical record as discussed with students in an Iowa State University veterinary school classroom setting	
UNIT 5: Board Regulations, Laws of Evidence and Their Effect on Admissibility	2
Analyze how the laws of evidence keep information out of trials or allow it in · Discover how easy it is to locate your state's medical record laws among your handouts provided with the course	
UNIT 6: Common Medical Record Errors	2
Ιδεντιφψ τηε μοστ χομμον, κεψ δατα ποιντσ τηατ αρε μισσινγ ιν πατιεντ ρεχορδσ ανδ ινφο τηατ σηουλδ ωερσυσ σηουλδ νοτ βε εντερεδ	
UNIT 7: Creativity Makes Record keeping Fun	2
Examine the handout provided with the course and see its examples of innovative, efficient recordkeeping ideas	
UNIT 8: The Nature of Court Hearings and Trials	2
Compare and contrast the 4 A's - alterations, amendments, addenda and adulterations and their effect on Board disciplinary actions · Learn the ten reasons clients say no and why documenting that reason is so important	
UNIT 9: Electronic Medical Records, Client Consents and Course Conclusion	2
Learn the pros, cons, difficulties and value of replacing paper with electronic medical records · effectively use the client consents that are included with the course to educate clients, fulfill board requirements and build a legal defense	

Program: Bachelor of Physiotherapy (BPT)
Semester: Fifth
Course: Emergency Care
Course Code: 23ADE02

L	T	P	Credits
2	0	0	2

COURSE LEARNING OBJECTIVE

CLO 1: Student will gain knowledge about important of first aid during emergency

CLO 2: Student will learn about assessment and vitals examination

CLO 3: Student will come to know what to do during various emergency

COURSE OUTCOME

At the end of the course, the candidate will able to

CO 1: Acquire knowledge about first aid

CO 2: Identify type of emergency and care to be given.

Course Content:

Topics	Hours
UNIT 1: Introduction to First Aid	24
Assessment, immediate Actions and the priorities within first aid; Bandages – Types, binders, splints & slings; Examination of Vital Signs; RTA including fractures and spinal cord injuries; Cardiac arrest; Respiratory failure; Burns; Shock- Electric, Hypovolemic and control of Bleeding, Hypothermia and Hyperthermia; Poisoning, Snake Bite.	
UNIT 2: Medical Triage	6
Medical Triage- concept of Emergency: Definition - Importance and rules, code tags and triage terminology.	

Program: Bachelor of Physiotherapy (BPT)
Semester: Fifth
Course: Fitness & Health Management
Course Code: 23ADE03

L	T	P	Credits
2	0	0	2

COURSE LEARNING OBJECTIVE

CLO 1: To introduce the fundamental concepts of physical education, health and fitness.
CLO 2: To provide a general understanding on nutrition, first aid and stress management.
CLO 3: To familiarize the students regarding yoga and other activities for developing fitness.
CLO 4: To create awareness regarding hypo-kinetic diseases, and various measures of fitness and health assessment.

COURSE OUTCOME

At the end of the course, student will able to
CO 1: Differentiate between health and physical fitness
CO 2: Describe various component of fitness and well being
CO 3: Built concept of nutritional balance food

Course Content:

Topics	Hours
UNIT 1: Modern Concept	3
Modern concept of Health, Physical fitness and Wellness	
UNIT 2: Components of Fitness	21
Components of Physical Fitness Physical fitness components - Speed, Strength, Endurance, Flexibility and Coordinative Abilities Types of Physical Fitness - Health related Physical Fitness - Performance Related Physical Fitness - Cosmetic fitness Fitness Balance	
UNIT 3: Principles of Exercise Programme & Nutritional Balance	6
Principles of Exercise Programme Activities for developing Physical Fitness Components Exercise and Heart rate Zones, Principles of First Aid Nutritional Balance	

Program: Bachelor of Physiotherapy (BPT)
Semester: Fifth
Course: Nutrition for Health
Course Code: 23ADE04

L	T	P	Credits
2	0	0	2

COURSE LEARNING OBJECTIVE

CLO 1: Understand the fundamental principles of human nutrition.
CLO 2: Analyse the nutritional requirements
CLO 3: Demonstrate knowledge of macro and micronutrients.
CLO 4: Design balanced and therapeutic diets
CLO 5: Apply nutrition knowledge in public health contexts.

COURSE OUTCOME

At the end of the course, the candidate will able to -
CO 1: Describe the role of essential nutrients in maintaining overall health and preventing nutritional disorders.
CO 2: Identify the causes, signs, and implications of nutrient deficiencies and excesses..
CO 3: Correlate the impact of diet and lifestyle on the risk of developing chronic and lifestyle-related diseases.
CO 4: Formulate basic dietary plans, including therapeutic and preventive diets, suitable for different populations.
CO 5: Promote nutritional awareness and apply strategies for improving nutritional health in community settings.

Course Content:

Topics	Hours
UNIT 1: Basic Concepts	5
Basic concepts in Food and Nutrition - Food and nutrition, Functions of Food	
UNIT 2: Nutrients	6
Nutrients – Macronutrients, Micronutrients	
UNIT 3: Food Groups & Preparations	9
Food groups (process of food selection and preparation) – Cereals, Pulses, Fruits and Vegetables, Milk and milk products, Eggs, Meat poultry and fish, Fats and oils	
UNIT 4: Meal Planning	6
Basic Concepts of Meal Planning - Recommended Dietary Intakes, Balanced Diet	
UNIT 5: Nutritional Status	4
Nutritional Status - Assessment of nutritional status, Food habits, Food misinformation	

Note: Special reference to Bhartiya Cultural Food habit.

DEPARTMENTAL ELECTIVE

SIXTH SEMESTER

Program: Bachelor of Physiotherapy (BPT)
Semester: Sixth
Course: Stress Management by Yoga
Course Code: 23ADE05

L	T	P	Credits
2	0	0	2

COURSE LEARNING OBJECTIVE

CLO 1: To achieve overall health of body and mind

CLO 2: To overcome stress

COURSE OUTCOME

At the end of course, candidate will able to

CO 1: Understand about healthy mind and body

CO 2: Apply concept of dealing with stressful to stress-free life

CO 3: Demonstrate various Yogic posture and pranayama and its effects in body

Course Content:

Topics	Hours
UNIT 1: Yoga	6
Concept of Yoga: Definition, origin, Aim & Objectives, Misconception, Rules and Regulation of Yoga Practice Definitions of Eight parts of yog. (Ashtanga)	
UNIT 2: Ashtanga and Part I & II	4
Definitions of Eight parts of yog. (Ashtanga), Yam and Niyam.	
UNIT 3: Do's and Don'ts in Life	10
i) Ahinsa, satya, astheya, bramhacharya and aparigraha ii) Shaucha, santosh, tapa, swadhyay, ishwarpranidhan	
UNIT 4: Asan & Pranayam , Part III & IV	10
Asan and Pranayam i) Various yog poses and their benefits for mind & body ii) Regularization of breathing techniques and its effects-Types of pranayam	

Program: Bachelor of Physiotherapy (BPT)
Semester: Sixth
Course: Cardiopulmonary Resuscitation and Rehabilitation
Course Code: 23ADE07

L	T	P	Credits
2	0	0	2

COURSE LEARNING OBJECTIVE
CLO1: Candidate will learn about importance of CPR and its steps
CLO2: Candidate will gain knowledge about automated external defibrillator
CLO3: Candidate will learn about foreign body obstruction in airways and how to remove obstruction.

COURSE OUTCOME
At the end of course candidate will
CO1: Able to describe importance of steps of CPR and its importance
CO2: Explain various parts and how to handle automated external defibrillator machine
CO3: Acquire knowledge about foreign body and airways obstruction**.**

Course Content:

Topics	Hours
UNIT 1: Introduction to CPR	9
Importance of high-quality CPR and its impact on survival, Steps of the Chain of Survival, BLS concepts of the Chain of Survival, Recognizing signs of someone needing CPR, How to do high-quality CPR for an adult	
UNIT 2: CPR	12
The importance of early use of an automated external defibrillator (AED), the use of an AED, Perform high-quality CPR for a child, Perform high-quality CPR for an infant, and describe the importance of teams in multi-rescuer resuscitation, Perform as an effective team member during multi-rescuer CPR	
UNIT 3: Rescue	9
Rescue breathing, Airway assistive devices, Provide effective ventilations by using different barrier device, describe the technique for relief of foreign-body airway obstruction for an adult or child, describe the technique for relief of foreign-body airway obstruction for an infant	

Program: Bachelor of Physiotherapy (BPT)
Semester: Sixth
Course: Evaluation Method & Outcome Measures
Course Code: 23ADE07

L	T	P	Credits
2	0	0	2

COURSE LEARNING OBJECTIVE

CLO1: Candidate will get an idea about measurement and evaluation.
CLO2: Candidate will learn cognitive, affective and psychomotor measurements
CLO3: Candidate will learn about different measurement tools
CLO4: Candidate will gain knowledge about assessment of learning outcome

COURSE OUTCOME

At the end of the course candidate will able to
CO1: Describe method of measurement and evaluation
CO2: Acquire knowledge about different measurement tools
CO3: Explain learning outcome

Topics	Hour
UNIT 1: Introduction	6
The concepts of measurement and evaluation as applied to behavioral sciences. How to measure outcome of the teaching-learning process in Computer Education	
UNIT 2: Outcome Measures	6
Cognitive, affective and psychomotor measurements. Teacher-made and standardized tests for Computer Education. Interpretation and treatment of the outcomes of the measurements.	
UNIT 3: Evaluation Strategies	6
Basic descriptive statistics. Formative and summative evaluation. Alternative evaluation strategies. Using measuring tools to find desired properties (reliability, validity, usefulness).	
UNIT 4: Measurement Tools	12
The measurement approaches based on traditional tools (written exams, short response examinations, multiple-choice tests, oral poll and homework). Measurement on multi-dimensional tools (observations, interviews, research papers, research projects, self-assessment, attitudes scales). Assessment of learning outcomes	

OPEN ELECTIVE

EIGHTH SEMESTER

Program: Bachelor of Physiotherapy (BPT)
Semester: Eighth
Course: Principles of management
Course Code: 23ADE07

L	T	P	Credits
2	0	0	2

COURSE LEARNING OBJECTIVE:

CLO1: The purpose of this course is to introduce the student to the roles and responsibilities of managers in organizations

CLO2: The class emphasizes experiential learning and self-inquiry to explore the job of a manager.

CLO3: The course will give knowledge of the managerial environment, decision-making, effective communications, and management ethics.

COURSE OUTCOME

At the end of the course student will able to

CO1: Examine the functions of planning, organizing, leading, staffing and controlling.

CO2: Evaluate and anticipate the potential effectiveness of various management styles, communications, and decisions for a given situation.

Topics	Hour
UNIT 1: Introduction	5
History and growth of management science	
UNIT 2: Healthcare Management	12
Traditional management vs. modern health care management, Evolution of management theory. Healthcare management as a profession	
UNIT 3: Component	9
Evaluation of Management Concepts. Management components i.e. Planning, Organizing, Staffing, Motivating, Leading, Co-ordination and Controlling.	
UNIT 4:Modern Management Concept	4
Modern Management concept and its implication in health sector	

Suggested Reading:

Principles of Management - L. M. Prasad - S. Chand

Essential Management - Koontz - Tata McGraw Hill Management - Peter Drucker

Program: Bachelor of Physiotherapy (BPT)
Semester: Eighth
Course: Ergonomics and Health Problem
Course Code: 23ADE07

L	T	P	Credits
2	0	0	2

COURSE LEARNING OBJECTIVE:

CLO1: To increase awareness of the need for and role of ergonomics in occupational health
CLO2: To obtain basic knowledge in the application of ergonomic principles to design of industrial workplaces and the prevention of occupational injuries
CLO3: To understand the breadth and scope of occupational ergonomics

COURSE OUTCOME

At the end of the course candidate will able to
CO1: Acquire knowledge about ergonomics, assessment process of equipment and posture; able to identify risk posture and its prevention
CO2: Describe anthropometry and workspace design and body demands
CO3: Explain Various Work related musculoskeletal disorders
CO4: Explain basic concept of health and health promotion work

Topics	Hour
UNIT 1: Introduction to Ergonomics and risk factors	5
Introduction to Ergonomics, Definition and History of Ergonomics, Assessment of task, equipment evaluation, Observation of work site, Identify various ergonomic risk factors, Explain WRMSD'S causes, prevention	
UNIT II: Anthropometry and Workspace Design	9
Anthropometry and Workspace Design Muscular work including dynamic and static work, nervous control of movement, skilled work and ways to improve work efficiency. Anthropometry is the study of the size and shape of the human body. Principles of workspace design, including seated work, standing work, work reaches and working heights, the office environment and visual work.	
UNIT III: Work related musculoskeletal disorders	9
Explain Various Work related musculoskeletal disorders, Discuss in detail about causes and ergonomics specific to different professions- Physiotherapist, dentist, teacher, computer operator, house wife, farmers, driver.	
UNIT IV: Health promotion focused on Work Place and Physical Activity	7
Basic concepts in public health and health psychology. Theoretical knowledge how a health promotion work can be carried out in different levels in the society. Theoretical knowledge regarding health promotion work especially with the physical working environment and physical activity within different fields and for different groups in the society.	

Textbooks Required:

- Kroemer, K.H.E., Fitting the Human: Introduction to Ergonomics, CRC Press Recommended: Freivalds, A., Neibel's Methods, Standards and Work Design,.McGraw Hill

Program: Bachelor of Physiotherapy (BPT)
Semester: Eighth
Course: Universal Human Value & Ethics
Course Code: 23ADE07

L	T	P	Credits
2	0	0	2

COURSE LEARNING OBJECTIVE

CLO 1: To make students aware of the key aspects of Indian culture and ethics.
CLO 2: To become acutely aware of the crisis developed within Indian human values and ethics.
CLO 3: To have a clear concept of the need for inculcating values into individual life and taking it to the larger domain.
CLO 4: To sensitize the student's mind towards gender discrimination and the need to create an equal society.
CLO 5: To make the students actively participate in sustaining and maintaining a clean environment.

COURSE OUTCOME

On completion of the Course, the students will be able to:
CO 1: Have a strong belief in our rich cultural and social heritage.
CO 2: Balancing their core values with dynamics of changing world.
CO 3: Thinking twice before supporting any kind of gender discriminatory act and sensitizing others towards building an equal society.
CO 4: Helping to build a strong family and retaining social values.
CO 5: Actively helping to save natural resources and cleaning the environment.

Topics	Hour
UNIT 1: Value Crisis in Contempory Indian Society	7
Value Crisis at the Individual Level, Societal Level, Intellectual Level, Cultural Level, Value – What are they? The Indian Concept of Values. Modern Approach to the Study of Values. Aesthetic Sensibilities	
UNIT II: Moral and Ethical Human Values	8
Bases for Moral Judgment Some Canons of Ethics. Virtue Ethics. Ethics of Duty. Ethics of Responsibility Factors to be considered in Making Ethical Judgments. Different Meanings of Human Values A New Approach to Human Value, Freedom, Creativity Love & Wisdom	
UNIT III: Moral Values in Profession	7
what is a Profession? Professional Ethos Code of Professional Ethics Practicing the Code Corporate Social Responsibility The Larger Domain of Human Values Institutionalizing Ethics and Human Values	
UNIT IV: Gender Sensitization	8
Socialization of women Just Relationships, being together as equals Declining sex ratio, demographic consequences Women's work, its politics and economics, fact and fiction, unrecognized and Unaccounted work Domestic violence, eve teasing and harassment. Is home a safe place?	

Suggested Reading:

1. Dr. Rajan Mishra, Human Values: Laxmi Publications Pvt. Ltd.
2. S. Dinesh Babu, Professional Ethics and Human Values; Laxmi Publications Pvt. Ltd.
3. P.S. Rathore. Business Ethics And Communication; S.Chand Publishing
4. Dr. K.Alex. Managerial Skills; S. Chand Publishing.
5. Dr. M. Adithan, Study Skills For Professional Students For Higher Education , S.Chand Publishing
6. Govindarajan M "Professional Ethics and Human Values."
7. R.R. Gaur and R. Sangal " A Foundation Course in Human Values and Professional Ethics"

Websites:

- www.tatamcgrawhill.com/digital Solutions/ monopoly
- www.schandedutech.com
- www.laxmipublications.com

Program: Bachelor of Physiotherapy (BPT)
Semester: Eighth
Course: Entrepreneurship in Health Sectors
Course Code: 23ADE07

L	T	P	Credits
2	0	0	2

COURSE LEARING OBJECTIVE:

The main objectives of the course are to:

CLO1: Introduce the basic principles of entrepreneurship and to demonstrate their value in the ongoing improvement of healthcare and population health.

CLO2: Explore how the main industries involved in healthcare (biopharma and medical devices) create and bring to the market new products and services.

CLO3: Examine the adoption of innovation in healthcare, and the critical role of the leader in creating an environment that facilitates innovation.

CLO4: Provide an overview of business model selection and business plan development. Intellectual property, licensing, alliances, partnerships and start-ups will also be explored.

CLO5: Discuss the creation of the start-up; namely, what makes an effective start-up team, and potential sources of funding.

CLO6: Describe venture capital and its associated competencies; pitching to investors, negotiation, valuation, and awareness of the deal structure.

COURSE OUTCOME

After completion of the course students are expected to be able to:

CO1: Define and describe innovation and entrepreneurship.

CO2: Discuss how governments try to support the innovation process.

CO3: Outline and examine the reasons why innovation adoption in healthcare requires careful consideration of the wider context and the nature of the innovation itself.

CO4: Critique the role evidence plays in the decision to adopt innovation and why its collection is hard for many healthcare innovations.

CO5: Describe the concept and importance of intellectual property and licensing.

CO6: Evaluate sources of funding.

CO7: Describe venture capital.

Topics	Hour
UNIT 1: Introduction	6
Meaning and Importance, Evolution of term 'Entrepreneurship', Factors influencing entrepreneurship', Psychological factors, Social factors, Economic factor, Environmental factors. Characteristics of an entrepreneur, Types of entrepreneur, Health entrepreneurship, Barriers to entrepreneurship	
UNIT 2: Entrepreneurial Motivation	6
Motivation Maslow's theory Herjburg's theory McGragor's Theory McClelland's Need – Achievement Theory. Culture & Society, Values / Ethics, Risk taking behavior	

UNIT 3: Creativity	6
Creativity and entrepreneurship, Steps in Creativity, Innovation and inventions, Using left brain skills to harvest right brain ideas, Legal Protection of innovation, Skills of an entrepreneur, Decision making and Problem Solving (steps indecision making). The Unique Case of the Healthcare Sector, Innovation in the Biopharma and Medical Device Industry, Health Innovation Adoption	
UNIT 4: Organisation Assistance	6
Assistance to an entrepreneur, New Ventures, Special Economic Zone (Meaning, features & examples), Financial assistance by different agencies, MSME Act Small Scale Industries, Carry on Business (COB) licence Environmental Clearance National Small Industries Corporation (NSIC), Government Stores Purchase scheme (e-tender process), Excise exemptions and concession, Exemption from income tax, Quality Standards with special reference to ISO, Financial assistance to MSME, Modernisation assistance to small scale	
UNIT 5: Rules And Legislation	6
Applicability of Legislation, Industries Development (Regulations) Act, 1951, Factories Act, 1948, The Industrial Employment (Standing Orders) Act, 1946, Suspension Stoppage of work, Termination of employment, Environment (Protection) Act, 1986.	

Program: Bachelor of Physiotherapy (BPT)
Semester: Eighth
Course: Disaster Risk Management for Health
Course Code: 23ADE07

L	T	P	Credits
2	0	0	2

COURSE LEARNING OBJECTIVE

CLO1: Candidate will learn about disaster and its management
CLO2: Candidate will learn about risk factors and its prevention methods
CLO3: Candidate will learn about responsibility and function in different disaster situation

COURSE OUTCOME

At the end of the course student will able to
CO1: Face different disaster situation as health care team
CO2: Communicate efficiently with health care team and others
CO3: maintain record for future and analyze other cases

Topics	Hour
UNIT 1: Introduction	7
Understanding Disaster Medicine, Epidemiological Study of Disasters, Prevention of Risk, Medical Preparedness Plan	
UNIT 2: Education & Planning	8
Logistics Management, Remote Area Planning, Education and Training in Health Management of Disasters	
UNIT 3: Disaster Management	7
Disaster Site Management, Clinical Casualty Management, Community Health Management, Medical and Health Response to Different Disasters	
UNIT 4: Role of Other Team	8
Role of Information and Communication Technology in Health Response, Psychological Rehabilitation, Practical Manual, Case Studies of Medical and Health Interventions in Disaster Management	

Program: Bachelor of Physiotherapy (BPT)
Semester: Eighth
Course: Personality Development through life Enlightment
Course Code: 23ADE07

L	T	P	Credits
2	0	0	2

COURSE LEARNING OBJECTIVE

CLO1: To learn to achieve the highest goal happily
CLO2: To become a person with stable mind, pleasing personality and determination
CLO3: To awaken wisdom in students

COURSE OUTCOME

Students will be able to
CO1: Study of Shrimad-Bhagwad-Geeta will help the student in developing his personality and achieve the highest goal in life
CO2: The person who has studied Geeta will lead the nation and mankind to peace and prosperity
CO3: Study of Neetishatakam will help in developing versatile personality of students

Topics	Hour
UNIT I: Neetisatakam	6
Holistic development of personality • Verses- 19,20,21,22 (wisdom) • Verses- 29,31,32 (pride & heroism) • Verses- 26,28,63,65 (virtue)	
UNIT II: Neetisatakam	6
Holistic development of personality • Verses- 52,53,59 (dont's) • Verses- 71,73,75,78 (do's)	
UNIT III: Approach	6
Approach to day to day work and duties. • Shrimad Bhagwad Geeta: Chapter 2- Verses 41, 47,48, • Chapter 3-Verses 13, 21, 27, 35, Chapter 6-Verses 5,13,17, 23, 35, • Chapter 18-Verses 45, 46, 48.	
UNIT IV: Statements of basic knowledge	6
Statements of basic knowledge. • Shrimad Bhagwad Geeta: Chapter2-Verses 56, 62, 68 • Chapter 12 -Verses 13, 14, 15, 16,17, 18 • Personality of Role model. Shrimad Bhagwad Geeta:	
UNIT V: Chapter2	6
Chapter 2 – Verses 17, Chapter 3 – Verses 36,3742, • Chapter 4 – Verses 18,38,68 • Chapter 18 – Verses 37,38,63	

TEXT BOOKS/ REFERENCES:

1. "Srimad Bhagavad Gita" by Swami Swarupananda Advaita Ashram (Publication Department), Kolkata.
2. Bhartrihari's Three Satakam (Niti-sringar-vairagya) by P.Gopinath, Rashtriya Sanskrit Sansthanam, New Delhi.