

Curriculum Book

And

Assessment and Evaluation Scheme

Based on

Outcome Based Education (OBE)

In

Bachelor of Physiotherapy

(BPT)

4 Year 6 Month Degree Program

Revised as on 01 August 2023 Applicable w.e.f.
Academic Session 2023-24



AKS University

Satna 485001, Madhya Pradesh, India

Faculty of Medical Science

Department of Paramedical Science



A K S University
Faculty of Medical Science
Department of Paramedical Science
Curriculum of Bachelor of Physiotherapy Program
(Revised as on 01 August 2023)

CONTENTS

Sl No	Item	Page No
1	Forwarding	i
2	Vice Chancellor Message	ii
3	Preface	iii
4	Introduction	1
5	Vision and Mission of the Paramedical Science Department	1
6	Programme Educational Objectives(PEO)	1-2
7	Programme Outcome(Pos) and Program Specific Outcome (PSO)	2-4
8	General Course Structure and Theme	5
9	Component Of Curriculum	5
10	General Course Structure and Hour Distribution	6
11	Course Code and Definition	6
12	Category-Wise Courses	7
13	Year Wise Course Structure	8
14	Year Wise Course Details	9-10
14.1	Year I	12-87
14.2	Year -II	88-176
14.3	Year -III	177-266
14.4	Year -IV	267-357


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Department of Paramedical
Science

Head of Department

Department of Paramedical Sciences,
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DEAN

Faculty of Medical Science

Dean

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Vice Chancellor

Professor B.A. Chopade
Vice-Chancellor
AKS University
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A K S University

**Faculty of Medical sciences
Department of Paramedical Sciences
Curriculum of Bachelor of Physiotherapy Program
(Revised as on 01 August 2023)**

Forwarding

I am thrilled to observe the updated curriculum of department of Paramedical sciences for Bachelor of Physiotherapy Program, which seamlessly integrates the most recent technological advancements and adheres to the guidelines set forth by mppmc. The revised curriculum also thoughtfully incorporates the directives of NEP-2020 and the Sustainable Development Goals.

The alignment of course outcomes (COs), Programme Outcome (POs) and Programme specific outcomes (PSOs) has been intricately executed, aligning perfectly with the requisites of NEP-2020 and NAAC standards. I hold the belief that this revised syllabus will significantly enhance the skills and employability of our students.

With immense satisfaction, I hereby present the revised curriculum for the Bachelor of Physiotherapy Program for implementation in the upcoming session.

**ER. AnantSoni
Pro Chancellor & Chairman
AKS University, Satna**

01 August 2023



A K S University
Faculty of Medical Science
Department of Paramedical Science
Curriculum of Bachelor of Physiotherapy Program
(Revised as on 01 August 2023)
From the Desk of the Vice-Chancellor



AKS University is currently undergoing a process to revamp its curriculum in to an outcome-based approach, with the aim of enhancing the teaching and learning process. The foundation of quality of quality education lies in the implementation of a curriculum that aligns with both societal and industrial needs, focusing on relevant outcomes. This entails dedicated and inspired faculty members, as well as impactful industry in tern ships. Hence, it is of utmost importance to begin this endeavor by crafting an outcome-based curriculum in collaboration with academia and industry experts. This curriculum design should be informed by the latest technological advancements, market demands, the guidelines outlined in the National Education Policy (NEP) of 2020, and sustainable goals.

I'm delighted to learn that the revised curriculum has been meticulously crafted by the department of Paramedical sciences for bachelor of physiotherapy Program and academia. This curriculum effectively integrates the principles outlined in the NEP-2020 guidelines, as well as sustainable goals. It also adeptly incorporates the latest advancements in medical science.

Furthermore, the curriculum takes into account the specific needs of the medical sciences, focusing on the treatment of the patient and services. It extends its reach to optimizing function of adls and optimizing their function in society. This in clusion not only imparts knowledge but also encourages students' independent thinking for potential enhancements in this area.

The curriculum goes be yond theoretical learning and embraces practical applications by incorporating the utilization of medical. To enhance students' skills, the curriculum integrates Hands- On Training, hospital visits, and On-Job Training experiences, research and progress. This well-rounded approach ensures that students receive a comprehensive education, fostering their skill development and preparing them for success in the medical industry.

I am confident that the up dated curriculum for Bachelor of Physiotherapy will not only enhance students' technical skills but also contribute significantly to their employability. During the process of revising the curriculum, I am pleased to observe that the department of paramedical sciences has diligently adhered to the guidelines provided by the MPPMC.

It's worth noting that curriculum revision is an ongoing and dynamic process, designed to address the continuous evolution of technological advancements and both local and global concerns. This ensures that the curriculum remains responsive and attuned to the changing landscape of education and hospital industry.

AKS University warmly invites input and suggestions from industry experts and technocrats and Alumni students to enhance the curriculum and make it more student-centered. Your valuable insights will greatly contribute to shaping an education that best serves the needs and aspirations of our students.

01 August 2023

Professor. B. A Chopade
Vice- Chancellor



A K S University
Faculty of Medical science
Department of Paramedical Science
Curriculum Bachelor of Physiotherapy Program

(Revised as on 01 August 2023)

Preface

As part of our commitment to ongoing enhancement, the Department of Paramedical sciences consistently reviews and updates its Bachelor of Physiotherapy program curriculum every four years. Through this process, we ensure that the curriculum remains aligned with the latest technological advancements, as well as local and global industrial and social demands. During this procedure, the existing curriculum for the Bachelor of Physiotherapy Program undergoes evaluation by a panel of technocrats, hospital industry specialists, and academics. Following meticulous scrutiny, the revised curriculum has been formulated and is set to be implemented starting from August 01, 2023. This implementation is contingent upon the endorsement of the curriculum by the University's Board of Studies and Governing Body. This curriculum closely adheres to the MPPMC syllabus distributed in May 2023. It seamlessly integrates the guidelines set for the by the Ministry of Higher Education, Government of India, through NEP- 2020, as well as the principles of Sustainable Development Goals. In order to foster the holistic skill development of students, a range of practical activities, including Hands-On Training, Industrial Visits, Project planning and execution, Report Writing, Seminars, and Industrial On-Job Training, have been incorporated. Furthermore, in alignment with MPPMC directives, this curriculum is enriched with course components in alignment with MPPMC guidelines. To ensure a comprehensive learning experience, detailed evaluation schemes and rubrics have also been meticulously provided. For each course, a thorough mapping of Course Outcomes, Program Outcomes, and Programme Specific Outcomes has been undertaken. As the course syllabus is being meticulously developed, various elements such as session outcomes, laboratory instruction, classroom instruction, self-learning activities, assignments, and mini projects are meticulously outlined. We hold the belief that this dynamic curriculum will undoubtedly enhance independent thinking, skills, and overall employability of the students.

Professor (Dr.) G.P. Richariya
Dean, Faculty of Medical Science
AKS University, Satna

01 August 2023



A K S University
Faculty of medical science
Department of Paramedical Science
Curriculum of Bachelor of Physiotherapy
Program
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Preface

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01August2023

Professor G C Mishra
Director IQAC
AKS University



A K S University
Faculty of medical science
Department of Paramedical Science
Curriculum of Bachelor of Physiotherapy Program
AKS University
Department of Paramedical Science

Introduction:-

AKS University is University to introduce 4 years 6month bachelor of physiotherapy program in the in the year 2021. The course curriculum is design as per the requirement of the paramedical sciences and the latest technological advancement. At present 122 students are perusing their bachelor of physiotherapy in this department. The department is equipped with state of the art laboratories for hands on training of the students. The in-clinical training and sandwich hospital training is the part of the curriculum. Some of the faculties of the department are physiotherapy experts with adequate clinical experience. With the sound class room knowledge and adequate practical and clinical knowledge the students confidently contributing in the hospitals sector.

Vision:

AKS university aims to be a top ranking center of Excellence in Health Science Education, Health Care and Research

Mission:

M-1:

Students graduating from the Institute will have the required skills to deliver the quality health care to all the sections of the society with compassion and benevolence, without prejudice or discrimination at an affordable cost

M-2:

As a Research Centre, it shall focus on finding better, safer and affordable ways of diagnosing, treating and preventing diseases. In doing so, it will maintain highest ethical standard

M-3: Inculcate technical competence and collective discipline in students to excel for physiotherapy field, hospital industry and society

M-4: Establish focus research groups in leading areas of PARAMEDICAL SCIENCES for optimization of thermal and electrical energy in cement manufacture and environmental needs.

PROGRAM EDUCATIONAL OBJECTIVES (PEO)

PEO -01: Systematic, extensive and coherent knowledge and skill in Physiotherapy and its applications including critical understanding of established theories, principles and concepts, knowledge of advanced and emerging issues in Physiotherapy, skills in musculoskeletal, neurological, cardio-respiratory Physiotherapy, recent advances and research in Physiotherapy evaluation and treatment procedures.

PEO-02: Comprehensive information about electrotherapy modalities, exercise equipment, advance learning material, skills and techniques

POE 03: Skill in collecting quantitative and qualitative data, analysis and interpretation of data using appropriate methodology and communicating results to scientific community and beneficiaries for formulating appropriate evidence based health care solutions.

PEO 04: Address self-learning needs related to current and emerging areas of study, use research and professional material, apply knowledge to new concepts and unfamiliar areas and seek solutions in real life situations

Program Outcomes (POs)

Bachelor of physiotherapy Graduate will able to perform:

1. **Disciplinary knowledge:** The student must demonstrate comprehensive knowledge and understanding of curricular content that form the program. The student must demonstrate cognitive learning skills, ability to receive, interpret, remember, reproduce and use information in the cognitive, psychomotor, and affective domains of learning to solve problems, evaluate work, and generate new ways of processing or categorizing similar information listed in course objectives.

2. **Psychomotor Skills:** Physiotherapy students must demonstrate psychomotor skills of locomotors ability to access lecture halls, practical laboratory and clinics.

- a. They must possess ability to move with reasonable swiftness in emergency situations to protect the patient (e.g. from falling).
- b. They should be competent to perform physical tasks such as positioning patients to effectively perform evaluation, manipulate assessment tools used for evaluation of joint mobility, muscle strength, testing musculoskeletal, neurological and cardio respiratory systems.
- c. Students should be competent to perform risk assessment, safely and effectively guide, facilitate, inhibit, and resist movement and motor patterns through physical facilitation and inhibition techniques (including ability to give timely urgent verbal feedback), perform transfers, positioning, exercise, mobilization techniques and use assistive devices and perform cardiopulmonary resuscitation.
- d. Students must possess fine motor skills to legibly record thoughts for written assignments (including diagrams) and tests, document evaluations, patient care notes, referrals, etc. in standard medical charts in hospital/clinical settings in a timely manner and consistent with the acceptable norms of clinical settings and safely use electrotherapy modalities and fine mobilization techniques.
- e. Students must possess visual acuity to read patient's treatment chart, observe demonstrations, visual training, receive visual information from patients, treatment environment and clues of treatment tolerance. Auditory acuity to distinguish between normal and abnormal sounds, engage in patients and conversation with retrieve meaningful information relevant to patient care.

3. Communication Skills: The student must be able to express thoughts and ideas effectively in writing and verbally, communicate with others using appropriate media, share views, demonstrate ability to listen carefully, write analytically, present complex information in a clear, and concise manner. Student must be able to effectively communicate information and safety concerns with other students, teachers, patients, peers, staff and personnel by asking questions, giving information, explaining conditions and procedures, or teaching home programs. They should be able to receive and send verbal communication in life threatening situations in a timely manner within the acceptable norms of clinical settings. Physiotherapy education presents exceptional challenges in the volume and breadth of required reading and the necessity to impart information to others. Students must be able to communicate quickly, effectively and efficiently in oral and written English with all members of the health care team.

4. Critical Thinking: Student should be able to apply analytical thought to a body of knowledge, analyze based on empirical evidence, draw relevant assumptions or implications, formulate arguments, critically evaluate policies and theoretical framework and formulate a scientific approach to knowledge development. They should be able to identify structural and functional impairments, identify contextual factors influencing function, critically appraise treatment options and implement care that is socio-culturally relevant to each patient. .

5. Problem Solving: Students must demonstrate capacity to extrapolate theoretical knowledge and apply competencies gained to solve non- familiar problems and real life situations.

6. Analytical Reasoning: To a certain extent, students should be able to evaluate reliability and relevance of evidence, synthesize data, draw valid conclusions and support them with evidence

7. Research – Related Skills: Students should be able to define research problem, formulate hypothesis, manage resources, analyze and interpret data, explore cause – effect relationships, plan and execute a report, present results of the experiment and demonstrate a sense of scientific enquiry, reflective thinking, self- directed learning and creativity.

8. Co-operation /Team Work: Students should demonstrate the ability to work effectively and respectfully with a multi-disciplinary team, facilitate co-operative and coordinated effort for the common cause in various clinical settings.

9. Socio-Cultural and Multicultural Competency: Knowledge of socio-cultural values, attitudes and beliefs relevant to a particular society, nation and global perspectives must be present to effectively engage and identify with diverse groups.

10. Awareness Of Moral, Ethical And Legal Issues: Students must demonstrate moral /ethical values in conduct, awareness of ethical issues related to patient care, work practices, refraining from malpractice, unethical Behavior, falsification, plagiarism, misinterpretation of data, non-adherence to intellectual property rights, adhering to truthful, unbiased actions in all aspects of work without discrimination based on age, race, gender, sexual preference, disease, mental status, lifestyle, opinions or personal values.

11. Leadership Qualities: Students must demonstrate ability for task allocation, organization of task elements, setting direction, formulating an inspiring vision, team building, to achieve a vision, engaging, knowledge and respect individual values and opinions in order to foster harmonious working relationships with colleagues, peers, and patients.

12. Ongoing Learning: Students must demonstrate ability to acquire knowledge and skills through ongoing learning, participation in continuous education programs, engaging in self-paced, self- directed learning

aimed at personal development, meeting social and cultural objectives, skill development, adapting to changing environment and workplace requirements and challenges.

Program Specific Outcomes (PSOs)

On completion of Bachelor of Physiotherapy Paramedical Sciences program, the students will achieve the following program specific outcomes:-

PSO- 1: Acquire assess apply and integrate new knowledge learn to adapt to changing circumstances and ensures that patient receives the highest level of professional care.

PSO-2: Ability to understand Demonstrate clinical decision making ability and provide appropriate patient care.

PSO-3: Able to counsel the patients, family, colleagues and students regarding all necessary aspects of physiotherapy treatment protocol.

PSO-4: Ability to Promote health education and improved quality of life through socially accepted and ethical practice of the profession.

Consistency/Mapping of PEOs with Mission of the Department

PEO	M1	M2	M3	M4
PEO-1	3	2	3	2
PEO-2	2	2	2	3
PEO-3	2	3	2	1
PEO-4	2	2	3	3

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High) “-”: No correlation

General Course Structure & Theme

1. Learning of hours (Theory/Practical)

Lecture (L) per week	25 hours
Practical (P) per week	04 hours

Components of the Curriculum

(Program curriculum grouping based on course components)

SI No	Course Component	% of total number of hours of the Program	Total number of hours
1	Physiotherapy Core Course (PCC)	97.14	3510
2	Projects (PJT)	2.85	100
	Total	100%	3610

General Course Structure

Curriculum of Bachelor of Physiotherapy Program

YEAR-I		YEAR- II	
Course Title	HOURS	Course Title	HOURS
1- Human Anatomy	200	1-Pathology & Microbiology	100
2-Human Physiology	200	2-Biochemistry & Pharmacology	100
3-Fundamental of Physics, Biomechanics & Biomechanical Modalities	160	3-Medicine including Pediatrics & Geriatrics	130
4-Fundamental of Medical Electronics & principles of Bioelectrical Modalities	160	4-General Surgery, Obstetrics & Gynecology	190
5-Psychology & Sociology	160	5-Exercise therapy including yoga	200
		6-Electrotherapy	200
Total hours	880	Total hours	920
YEAR –III		YEAR – IV	
Course Title	HOURS	Course Title	HOURS
1-Neurology including Psychiatry & Neurosurgery	100	1-Community PT, Rehabilitation & Disability prevention	160
2-Orthopaedics	130	2-Research methodology & Biostatics	100
3-Applied Biomechanics & Kinesiology	100	3-Cardiothoracic diseases and surgeries	100
4-Physiotherapeutic in Neurology & Neurosurgery	200	4-Physiotherapeutic in General & Cardiothoracic Conditions	160
5-Physiotherapeutic in Orthopaedic Conditions	200	5-Sports Physiotherapy	160
6-Physical Evaluation, Diagnosis & Prescription	200	6-PT Ethics, management & Administration ** NUES	100
		7-Project Work**NUES	100
Total hours	930	Total hours	880

- i. Major Research Project: major research project is compulsory for all 4th Year students in a particular topic of physiotherapy.

Course code and definition:

L = Lecture

P = Practical

PCC = Professional core courses

Course level coding scheme:

Two-digit number used as suffix with the Course Code for identifying the level of the course. Digit at ten's place

signifies the year in which course is offered. e.g.

01, 02 ... etc. for first year.

21, 22.... Etc. for second year.

31, 32 ... for third year.

41. 42--- for Fourth year

Category-wise Courses
Physiotherapy Core Course (PCC)
(i) Number of Physiotherapy Core Course (PCC):

Sl.	Code No.	Subject	YEAR	HOURS
1	122BPT01	1. Human Anatomy	I	200
2	122BPT02	2 Human Physiology	I	200
3	122BPT03	3. Fundamental of Physics, Biomechanics & Biomechanical Modalities	I	160
4	122BPT04	4. Fundamental of Medical Electronics & principles of Bioelectrical Modalities	I	160
5	122BPT05	5. Psychology & Sociology	I	160
6	122BPT21	1- Pathology & Microbiology	II	100
7	122BPT22	2- Biochemistry & Pharmacology	II	100
8	122BPT23	3- Medicine including Pediatrics & Geriatrics	II	130
9	122BPT24	4- General Surgery, Obstetrics & Gynecology	II	190
10	122BPT25	5- Exercise therapy including yoga	II	200
11	122BPT26	6- Electrotherapy	II	200
12	122BPT31	Neurology including Psychiatry & Neurosurgery	III	100
13	122BPT32	Orthopaedics	III	130
14	122BPT33	Applied Biomechanics & Kinesiology	III	100
15	122BPT34	Physiotherapeutic in Neurology & Neurosurgery	III	200
16	122BPT35	Physiotherapeutic in Orthopaedic Conditions	III	200
17	122BPT36	Physical Evaluation, Diagnosis & Prescription	III	200
18	122BPT41	Community PT, Rehabilitation & Disability prevention	IV	160
19	122BPT42	Research methodology & Biostatistics	IV	100
20	122BPT43	Cardiothoracic diseases and surgeries	IV	100
21	122BPT44	Physiotherapeutic in General & Cardiothoracic Conditions	IV	160
22	122BPT45	Sports Physiotherapy	IV	160
23	122BPT46	PT Ethics, management & Administration ** NUES	IV	100
			Total Hours:	3510

Projects (PJT) (6)

Sl.	Code No.	Subject	YEAR	HOURS
1	122BPT47	Major Research Project	4	100
Total Hours:				100

Induction Program

Induction program for students to be offered right at the start of the first year. It is mandatory.

AKSUniversity has designed an induction program for 1st year student, details are below:

- i. Physical activity
- ii. Creative Arts
- iii. Universal Human Values
- iv. Literary
- v. Proficiency Modules
- vi. Lectures by Eminent speakers
- vii. Visits to local Areas
- viii. Familiarization to Dept./Branch & Innovations

Mandatory Visits/ Workshop/Expert Lectures:

- i. It is mandatory to arrange one industrial visit every semester for the students.
- ii. It is mandatory to conduct a One-week workshop during the winter break after third semester on professional/ industry/ entrepreneurial orientation.
- iii. It is mandatory to organize at least one expert lecture per semester for each branch by expert resource persons from industry.

Evaluation Scheme:

1. For Theory Courses:

- i. The weightage of Internal assessment is 50% and
 - ii. End Semester Exam is 50%
- The student has to obtain at least 40% marks individually both in internal assessment and endsemester exams to pass.

2. For Practical Courses:

- i. The weightage of Internal assessment is 50% and
 - ii. End Semester Exam is 50%
- The student has to obtain at least 40% marks individually both in internal assessment and endsemester exams to pass.

3. For Summer Internship / Projects / Seminar etc.

Evaluation is based on work done, quality of report, performance in viva-voce, presentation etc

Year wise Course Structure

Year wise Brief of total Teaching Hours

Year	L	P	Total Hours Per Week	Total Hours
Year –I	640	240	33	880
Year –II	730	190	35	920
Year –III	650	280	31	930
Year – IV	760	120	30	880
Total	2740	830	129	3610

Details of Year Wise Course Structure

YEAR – I

SN	Category	Code	Course Title	L	P	Total Hour
1	PCC	122BPT01	1- Human Anatomy	140	60	200
2	PCC	122BPT02	2-Human Physiology	140	60	200
3	PCC	122BPT03	3-Fundamental of Physics, Biomechanics & Biomechanical Modalities	100	60	160
4	PCC	122BPT04	4-Fundamental of Medical Electronics & principles of Bioelectrical Modalities	100	60	160
5	PCC	122BPT05	5-Psychology & Sociology	160	0	160
Total				640	240	880

YEAR – II

SN	Category	Code	Course Title	L	P	Total Hour
1	PCC	122BPT21	1-Pathology & Microbiology	100	0	100
2	PCC	122BPT22	2-Biochemistry & Pharmacology	100	0	100
3	PCC	122BPT23	3-Medicine including Pediatrics & Geriatrics	130	0	130
4	PCC	122BPT24	4-General Surgery, Obstetrics & Gynecology	190	0	190
5	PCC	122BPT25	5-Exercise therapy including yoga	120	80	200
6	PCC	122BPT26	6-Electrotherapy	120	80	200
Total				730	160	920

YEAR – III

SN	Category	Code	Course Title	L	P	Total Hour
1	PCC	122BPT31	1-Neurology including Psychiatry & Neurosurgery	100	0	100
2	PCC	122BPT32	2-Orthopaedics	130	0	130
3	PCC	122BPT33	3-Applied Biomechanics & Kinesiology	100	0	100
4	PCC	122BPT34	4-Physiotherapeutic in Neurology & Neurosurgery	110	90	200
5	PCC	122BPT35	5-Physiotherapeutic in Orthopaedic Conditions	120	80	200
6	PCC	122BPT36	6-Physical Evaluation, Diagnosis & Prescription	120	80	200
Total				650	280	930

YEAR - IV

SN	Category	Code	Course Title	L	P	Total Hour
1	PCC	122BPT41	1-Community PT, Rehabilitation & Disability prevention	160	0	160
2	PCC	122BPT42	2-Research methodology & Biostatics	100	0	100
3	PCC	122BPT43	3-Cardiothoracic diseases and surgeries	100	0	100
4	PCC	122BPT44	4-Physiotherapeutic in General & Cardiothoracic Conditions	100	60	160
5	PCC	122BPT45	5-Sports Physiotherapy	100	60	160
6	PCC	122BPT46	6-PT Ethics, management & Administration ** NUES	100	0	100
7	PJT	122BPT47	7-Project Work**NUES	100	0	100
Total				760	120	880

Total Hours: 3610

CURRICULUM BPT FIRST YEAR

Year – I

Course Code: 122BPT01

Course Title: Human Anatomy

Pre-Requisite: Student should have basic knowledge of human body structure and location.

Rationale: The student studying BPT should possess structural understanding about structure and organization of the human body, relationships between body parts and systems, locations and functions of organs, tissues, and cells.

Course Outcomes:

Course Code:	122BPT01
Course Title:	Human anatomy
Course Outcomes:	
122BPT01.1	Find how to extend the basic concepts of gross anatomy of various body.
122BPT01.2	Apply concepts regarding the types of upper extremity and thorax.
122BPT01.3	Learn the basic concepts of lower extremity pelvis urinary system genital system ,endocrine system
122BPT01.4	Recall the basic concepts of the renal system, digestive system, nerve muscle and synaptic & junction transmission
122BPT01.5	Relate the basic idea of nervous system

Scheme of Studies

CODE	Course Code	Course Title	Scheme of studies (Hours/Week)				Total Study Hours (CI+LI+SW+SL)
			CI	LI	SW	SL	
PCC	122BPT01	Human Anatomy	5	2	1	1	9

Legend: **CI:** Classroom Instruction (Includes different instructional strategies i.e. Lecture (L) and Tutorial (T) and others),
LI: Laboratory Instruction (Includes Practical performances in laboratory workshop, field or other locations using different instructional strategies)
SW: Sessional Work (includes assignment, seminar, mini project etc.),
SL: Self Learning,

Note: SW & SL has to be planned and performed under the continuous guidance and feedback of teacher to ensure outcome of Learning.

Scheme of Examination

Theory

CODE	Course Code	Course Title	Internal Assessment		University Examination			Total
			Theory	Practical	Theory	Viva	Practical	
PCC	122BPT01	Human Anatomy	20	20	100	20	40	200

COURSE-CURRICULUM DETAILING:

This course syllabus illustrates the expected learning achievements, both at the course and session levels, which students are anticipated to accomplish through various modes of instruction including Classroom Instruction (CI), Laboratory Instruction (LI), Sessional Work (SW), and Self Learning (SL). As the course progresses, students should showcase their mastery of Session Outcomes (SOs), culminating in the overall achievement of Course Outcomes (COs) upon the course's conclusion.

122 BPT01.1: Find how to extend the basic concepts of gross anatomy of various body

Hours

Item	Hrs
CI	30
LI	06
SW	02
SL	02
Total	40

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO1.1 Understand General Anatomy</p> <p>SO1.2 learn about the kinesiology</p> <p>SO1.3 Analysis of Embryology</p> <p>SO1.4 Analysis of Functional anatomy of Circulatory system</p> <p>SO1.5 Application of Functional anatomy of Lymphoid system</p>	<p>1. Learning of surface landmarks with special emphasis on bones, joints, muscles, and nerves]</p> <p>2. Bone structure</p> <p>3. Joints – classification, structures</p>	<p>UNIT-1 General Anatomy , kinesiology and Embryology</p> <p>1.1 Introduction to Anatomy</p> <p>1.2 terms and terminology</p> <p>1.3 Regions of Body</p> <p>1.4 cavities</p> <p>1.5 Systems outline.</p> <p>1.6 Surface anatomy</p> <p>1.7 Musculoskeletal</p> <p>1.8 cardiopulmonary</p> <p>1.9 Cell Structure and function of cell organelles (Brief outline only).</p> <p>1.10 Connective tissue & its modification</p> <p>1.11 tendons, membranes</p> <p>1.12 Special connective tissue.</p> <p>1.13 Bone structure, blood supply, growth, ossification, and classification.</p> <p>1.14 Muscle classification, structure and functional aspect.</p> <p>1.15 Nerve – structure, classification, microscopy with examples.</p> <p>1.16 Neurons, classification with examples. Simple reflex arc.</p> <p>1.17 Parts of a typical spinalcurve/Dermatome</p> <p>1.18 Joints – classification, structures of joints, movements, range, limiting factors, stability, blood supply, nerve supply, dislocations and applied anatomy.</p> <p>1.19 Circulatory system – major arteries and veins of the body, structure of blood vessels</p> <p>1.20 Lymphoid system – circulation + function, lymphoid organs- and their structure & function</p> <p>1.21 kinesiology</p>	<p>1. General introduction of general body parts ,bones muscles and nerves.</p> <p>2. Introduction of kinesiology circulatory system and embryology</p>

		1.22 Basic Concepts 1.23. Muscular system 1.24. Joints 1.25 Machinery Musculoskeletal system 1.26 Principles of Motion 1.27. Principles of force and work 1.28 Basics of the development of motor skill Principles of stability 1.29 Postural principles 1.30. Embryology in brief of neuromuscular tissue	
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SW-1 Suggested Sectional Work (SW):

a. Assignments:

i. Bone structure, blood supply, growth, ossification, and classification.

b. Mini Project:

i. Neurons, classification with examples. Simple reflex arc.

c. Other Activities (Specify):

Project work on bone ossification

122BPT01.2: Apply concepts regarding the types of upper extremity and thorax Hours

Item	Hrs
CI	30
LI	06
SW	06
SL	04
Total	46

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO2.1 To Understand cardio vascularsystem, SO2.2 To learn about cardio respiratory adjustments in health SO2.3 Application of Basic idea of Electrocardiogram and Interpretation of normal Electrocardiogram. SO2.4 Application of Arterial blood pressure and patho physiology of Hypertension SO2.5 Analysis of Exercise physiology in effects of acute & chronic exercises</p>	<p>1. Examination of of vital 2. Thoracic cage 3. Mechanics of respiration</p>	<p>Unit -2 Upper extremity and thorax 2.1 Bony architecture 2.2 Joints 2.3 Structure 2.4 range of movement 2.5 Muscles – 2.6 Origin 2.7 Insertion 2.8 Actions 2.9 nerve supply 2.10 Major nerves 2.11 course, branches 2.12 nerve injuries 2.13 Development of limb bones 2.14 muscles and anomalies 2.15 Radiographic identification of bone 2.16. joints 2.17. Thoracic cage 2.18. Pleural cavities 2.19 pleura 2.20. Lungs 2.21. Lungs 2.22. Lungs 2.23 . respiratory tree 2.24. Heart 2.25. Heart 2.26. Heart 2.27. great vessels 2.28. great vessels 2.29 great vessels 2.30.. Diaphragm</p>	<p>1. General introduction of cardiovascular systems 2. Asthma, emphysema, artificial respiration 3. Cardiac output and cardiac failure. 4. Diaphragm</p>

SW-1 Suggested Sectional Work (SW):

Assignments:

Cardiac cycle and Heart sounds, Mechanical events of Cardiac cycle, Cardiac output, its regulation.

Mini Project:

Structure and organization of vascular tree. Basic idea of Electrocardiogram and Interpretation of normal Electrocardiogram.

Other Activities (Specify):

Effects of Exercises on muscle strength, power, endurance, B.M.R., R.Q.- hormonal & metabolic effects respiratory & cardiac conditioning.

122BPT01.3: Learn the basic concepts of lower extremity pelvis urinary system genital system, endocrine system

Hours

Item	Hrs
CI	25
LI	06
SW	05
SL	04
Total	40

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO3.1 To Understand lower extremities structure</p> <p>SO3.2 To learn about Endocrinesystem.</p> <p>SO3.3 To learn about reproductivesystem.</p> <p>SO3.4 Application of Kidney, Ureter, bladder, urethra</p> <p>SO3.5 Analysis of Functions and hypo & hyper secretion of hormones of a. Pituitary b. Thyroid c. Parathyroid d. Adrenal e. Endocrine part of pancreas.</p>	<p>1. Bony architecture</p> <p>2. Radiographic identification of bone and joints</p> <p>3. Bony Pelvis</p>	<p>Unit-3 LOWER EXTREMITY PELVIS URINARY SYSTEM GENITAL SYSTEM</p> <p>3.1 Bony architecture</p> <p>3.2 Joints – structure</p> <p>3.3 range of movement</p> <p>3.4 Muscles</p> <p>3.5 Origin</p> <p>3.6 Insertion</p> <p>3.7 Actions</p> <p>3.8 nerve supply</p> <p>3.9 Major nerves</p> <p>3.10 course,</p> <p>3.11 branches</p> <p>3.12 implications of nerve injuries</p> <p>3.13 Development of limb bones</p> <p>3.14, muscles and anomalies</p> <p>3.15 Radiographic identification of bone</p> <p>3.16 joints</p> <p>3.17 Pelvic floor</p> <p>3.18 innervations</p> <p>3.19 Bony Pelvis</p> <p>3.20 Kidney</p> <p>3.21 Ureter</p> <p>3.22 Bladder</p> <p>3.23 urethra</p> <p>3.24 Male Genital system Female Genital system</p> <p>3.25 Pituitary Thyroid parathyroid</p>	<p>1. range of movement</p> <p>2. About Kidney</p> <p>3. About hip bone</p> <p>4. Pelvic floor, innervations</p>

SW-1 Suggested Sectional Work(SW):

Assignments:

Functional anatomy lower extremity

Mini Project:

Pelvic floor, innervations

Other Activities (Specify):

Physiological basis of Fertilization, Implantation, Pregnancy, Parturition and Lactation

122BPT01.4: Recall the basic concepts of the renal system, digestive system, nerve muscle and synaptic & junction transmission

Hours

Item	Hrs
CI	30
LI	06
SW	05
SL	04
Total	45

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO4.1 To Understand renal system,</p> <p>SO4.2 To learn about digestive system.</p> <p>SO4.3To learn about nerve degeneration</p> <p>SO4.4 Application of Concept of isometric & isotonic muscle contraction</p> <p>SO4.5 Principal neurotransmitter system</p>	<p>1.Functions of Kidney</p> <p>Functions of</p> <p>2.Liver & Exocrine Pancreas</p> <p>3.isometric & isotonic musclecontraction</p>	<p>Unit-4 RENAL SYSTEM, DIGESTIVE SYSTEM, NERVE - MUSCLE AND SYNAPTIC & JUNCTION TRANSMISSION</p> <p>4.1 Functions of Kidney</p> <p>4.2 Formation of Urine</p> <p>4.3 Glomerular filtration rate</p> <p>4.4 clearance,</p> <p>4.5 Tubular function</p> <p>4.6 Water excretion,</p> <p>4.7 concentration of urine-regulation of Na, Cl, K excretion</p> <p>4.8 Physiology of urinary bladder,</p> <p>4.9 Micturition- Neurogenic bladder.</p> <p>4.10 Digestion & absorption of nutrients .</p> <p>4.11 Gastrointestinal secretions</p> <p>4.12 regulation Functions of Saliva,</p> <p>4.13 Gastric juice</p> <p>4.14 Pancreatic juice</p> <p>4.15 Succus entericus</p> <p>Bile. Movements of G.I.T.</p> <p>4.16 Functions of Liver</p> <p>4.17 Exocrine Pancreas</p> <p>4.18 Nerve – General Concept Nerve cell structure</p> <p>4.19 Genesis of resting membrane potential & Action potential Their ionic basis, All or Nonephenomenon Ionic basis of nerve conduction</p> <p>4.20Classification & types of nerve fibre</p> <p>4.21 Mixed nerves & compound action potential Concept of nerve injury</p> <p>4.22 Wallerian degeneration</p> <p>4.23 Muscle properties</p> <p>4.24 functions</p> <p>Electric & Mechanical responses & their basis</p> <p>4.25.Concept of isometric & isotonic muscle contraction</p>	<p>1.Digestion & absorption of nutrients</p> <p>2.Movements of G.I.T.</p> <p>3.Concept of nerve injury & Wallerian degenerationPrincipa l neurotransmittersyste m</p>

		4.26. Electrical events in 4.27 postsynaptic neurons Inhibition & facilitation at synapses Chemical transmission of synaptic activity 4.28. Principal neurotransmitter system 4.29 Neuromuscular junction, structure 4.30 events occurring during excitation.	
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SW-1 Suggested Sectional Work(SW):

Assignments:

Physiology of urinary bladder, Micturition- Neurogenic bladder. Nerve cell – structure

Mini Project:

Muscle properties and functions, Electric & Mechanical responses & their basis

Other Activities (Specify):

Chemical transmission of synaptic activity, Neuromuscular junction, structure & events occurring during excitation.

122BPT01.5: Relate the basic idea of nervous system

Hours

Item	Hrs
CI	25
LI	06
SW	05
SL	04
Total	40

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO5.1 To Understand Nervous system</p> <p>SO5.2 To learn about Higher functionof nervous system</p> <p>SO5.3. To learn about special senses</p> <p>SO5.4 Application of Ascending tracts of the Spinal cord and effects of their lesions</p> <p>SO5.5 Analysis of Functions Autonomic nervous system & Hypothalamus.</p>	<p>1.Clinical examination of Central Nervous system.</p> <p>2.Specialsenses</p> <p>3.Cerebellum, Basal Ganglia andMotor cortex.</p>	<p>Unit-5 NERVOUS SYSTEM (descriptive), HIGHER FUNCTIONS OF NERVOUS SYSTEM, SPECIAL SENSES</p> <p>5.1 Organization of Nervous system</p> <p>5.2 .Neuron</p> <p>5.3 Neuralgia Synapse: Properties</p> <p>5.4 Synaptic transmission.</p> <p>5.5 Reflex arc,</p> <p>5.6 components, properties</p> <p>5.7 type and neurological impairments.</p> <p>5.8 General sensations and their properties.</p> <p>5.9 Ascending tracts of the Spinal cord</p> <p>5.10effects of their lesions.</p> <p>5.11Pain and physiological Analgesia. Motor neurons</p> <p>5.12 Descending tracts and their applied aspects.</p> <p>5.13Regulation of Muscle</p> <p>5.14Tone by Spinal and</p> <p>5.15Supra-spinal mechanism.</p> <p>5.16 Function of Brain -stem, Cerebellum,</p> <p>5.17 BasalGanglia ,Motor cortex</p> <p>.</p> <p>5.18 Control of Voluntary movement Regulation of posture and equilibrium, vestibular apparatus.</p> <p>5.19 Broad functions of Thalamus, Hypothalamus, Major lobes of Cerebral cortex and Ascending Reticular Activation System Limbic System Learning, memory, speech and conditionalreflexes.</p> <p>5.20 Reflexes, monosynaptic, a. polysynaptic, withdrawal reflex Properties of reflexes</p> <p>5.21.Sense organ, receptors, electrical & chemicalevents in receptors, Learning & memory, neocortex</p> <p>20.Limbic functions,</p>	<p>1.General sensations and their properties.</p> <p>2.Pain and physiological Analgesia.</p> <p>3.Control of Voluntary movement</p> <p>4.Learning, memory, speech and conditional reflexes.</p>

		<p>sexual behaviour, fear & range, motivation</p> <p>5.22.Ionic basis of excitation, Functional anatomy of the Eye Optics of Vision Retinal Function Visual Pathways</p> <p>5.23.Sensory pathways for touch, temperature, pain, proprioception, others Mechanism of Hearing. Sensation of Taste and Smell</p> <p>5.24.Control of tone & posture: Integration at spinal, brain stem, cerebella, basal ganglion levels, along with their functions & clinical aspects.Autonomic nervous system & Hypothalamus</p> <p>5.25. Functioning of Autonomic Nervous System with special reference to micturition, defecation and labour ii. Higher neural regulation of ANS.</p>	
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SW-1 Suggested Sectional Work(SW):

Assignments:

Reflex arc, its components, properties, type and neurological impairments, Limbic functions, sexual behaviour, fear & range, motivation

Mini Project:

Visual Pathways, Mechanism of Hearing.

Other Activities (Specify):

Sensation of Taste and Smell, Control of tone & posture: Integration at spinal, brain stem, cerebella, basal ganglion levels.

Brief of Hours suggested for the Course Outcome

Course Outcomes	Class Lecture (CI)	Laboratory Instruction (LI)	Sessional Work (SW)	Self-Learning (SI)	Total hour (CI+LI+SW+SI)
122BPT01.1 Find how to extend the basic concepts of gross anatomy of various body.	30	06	02	02	40
122BPT01.2 Apply concepts regarding the types of upper extremity and thorax.	30	06	06	04	46
122BPT01.3 Learn the basic concepts of lower extremity pelvis urinary system genital system, endocrine system	25	06	05	04	40
122BPT01.4 Recall the basic concepts of the renal system, digestive system, nerve muscle and synaptic & junction transmission	30	06	05	04	45
122BPT01.5 Relate the basic idea of nervous system	25	06	05	04	40
Total Hours	140	30	23	18	211

Suggestion for End Semester Assessment

Suggested Specification Table (For ESA)

CO	Unit Titles	Marks Distribution				Total Marks
		Ap	An	Ev	Cr	
CO-1	Find how to extend the basic concepts of gross anatomy of various body.					
CO-2	Apply concepts regarding the types of upper extremity and thorax.					
CO-3	Learn the basic concepts of lower extremity pelvis urinary system genital system ,endocrine system					
CO-4	Recall the basic concepts of the renal system, digestive system, nerve muscle and synaptic & junction transmission					
CO-5	Relate the basic idea of nervous system					
Total						100

Legend: Ap: Apply, An: Analyze, Ev: Evaluate Cr: Create

Note. Detailed Assessment rubric need to be prepared by the course wise teachers for above tasks.
Teachers can also design different tasks as per requirement, for end semester assessment.

Suggested Instructional/Implementation Strategies:

1. Improved Lecture
2. Tutorial
3. Case Method
4. Group Discussion
5. Role Play
6. Visit to hospitals.
7. Demonstration

Suggested Learning Resources:

(a) **Books:**

S. No.	Title	Author	Publisher	Edition & Year
1	Human Anatomy	Chaurasia, B D	Regional and CBS, New Delhi	2009
2	Text Book of Anatomy	Singh, Inderbir	Jaypee, New Delhi	2009
3	Essentials of Human Anatomy	Datta, A.K.	Neuroanatomy Current Book, Calcutta	First Edition
4	Gray's Anatomy	Williams, Peter L	Anatomical Basis of Churchill Livingstone, New York	2006
5	Lecture note provided by Faculty of Medical science, AKS University, Satna .			

Curriculum Development Team

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2. Dr. Debjcet dutta Principal Department of paramedical science AKS University ,
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5. Dr. Poonam Singhariya, Assistant Professor , Department of paramedical science
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CO, POs and PSOs Mapping
Program title: B.P.T (Bachelor of physiotherapy)
Course code: 122BPT01 Course title: Human Anatomy

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO2	PSO3	PSO4
	Disciplinary knowledge	Psychomotor Skills	Communication skills	Critical thinking	Problem Solving	Analytical reasoning	Research – Related Skills	Co-operation /Team Work	Socio-cultural and multicultural competency	Awareness of moral, ethical and legal issues	Leadership qualities	Ongoing Learning:	Ability to Patient professional care .	Ability to Demonstrate clinical decision and patient care	Ability to counsel the patients, family, colleagues and students aspects of physiotherapy treatment.	Ability to Work effectively in various professional collaborative places like hospital.
CO1: find how to extend the basic concepts of gross anatomy of various body.	1	1	2	2	3	2	3	2	2	1	3	2	2	3	3	1
CO2: apply concepts regarding the types of upper extremity and thorax	1	1	2	2	1	2	3	2	1	1	2	2	2	2	2	1
CO3: learn the basic concepts of lower extremity pelvis urinary system genital system ,endocrine system	2	2	1	1	2	2	2	1	2	1	2	1	1	2	2	2
CO4: recall the basic concepts of the renal system, digestive system, nerve muscle and synaptic & junction transmission	3	2	2	2	3	2	3	2	2	1	2	3	1	3	3	2
CO5: relate the basic idea of nervous system	.	.	.	1	1	3	3	3	1	1	2	2	1	3	1	3

Legends: 1- Low, 2- Medium, 3- High

Course Curriculum Map:

POs & PSOs No.	COs No.& Titles	SOs No.	Laboratory Instruction (LI)	Classroom Instruction(CI)	Self Learning (SL)
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO1: find how to extend the basic concepts of gross anatomy of various body.	SO1.1 SO1.2 SO1.3 SO1.4 SO1.5	06	unit-1 general anatomy , kinesiology and embryology 1,2,3,4,5,6,7,8,9,10,11,12,13,14, 15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30	2
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO2: apply concepts regarding the types of upper extremity and thorax	SO2.1 SO2.2 SO2.3 SO2.4 SO2.5	06	unit -2 upper extremity and thorax 1,2,3,4,5,6,7,8,9,10,11,12,13,14, 15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30	4
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO3: learn the basic concepts of lower extremity pelvis urinary system genital system ,endocrine system	SO3.1 SO3.2 SO3.3 SO3.4 SO3.5	06	lower extremity pelvis urinary system genital system 1,2,3,4,5,6,7,8,9,10,11,12,13,14, 15,16,17,18,19,20,21,22,23,24,25	4
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO4: recall the basic concepts of the renal system, digestive system, nerve muscle and synaptic & junction transmission	SO4.1 SO4.2 SO4.3 SO4.4 SO4.5	06	unit-4 renal system, digestive system, nerve - muscle and synaptic & junction transmission 1,2,3,4,5,6,7,8,9,10,11,12,13,14, 15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30	4
PO: 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO5: relate the basic idea of nervous system	SO5.1 SO5.2 SO5.3 SO5.4 SO5.5	06	unit-5 nervous system (descriptive), higher functions of nervous system, special senses 1,2,3,4,5,6,7,8,9,10,11,12,13,14, 15,16,17,18,19,20,21,22,23,24,25	4

YEAR 1

Course Code: 122BPT02
Course Title: Human Physiology
Pre- requisite: The study of how living organisms function,

Rationale: The students studying principles and practice of body functions and maintains homeostasis, bodily systems and processes, body responds to stress, disease, and injury, genetics and environment impact physiological processes.

Course Outcomes:

Course Code:	122BPT02
Course Title:	Human Physiology
Course Outcomes:	
122BPT02.1	Find how to extend the basic concepts of general physiology, blood, skin and body temperature regulation
122BPT02.2	Apply concepts regarding the types of cardio vascular system, cardio-respiratory adjustments in health & disease, exercise physiology
122BPT02.3	Learn the basic concepts of the types of respiratory system, endocrine, reproductive system
122BPT02.4	Recall the basic concepts of the renal system, digestive system, nerve – muscle and synaptic & junction transmission
122BPT02.5	Relate the basic idea of the types of respiratory system, endocrine, reproductive system

Scheme of Studies

CODE	Course Code	Course Title	Scheme of studies (Hours/Week)				
			C I	LI	SW	SL	Total Study Hours (CI+LI+SW+SL)
PCC	122BPT02	Human Physiology	6	0	1	1	8

- Legend:**
- CI:** Classroom Instruction (Includes different instructional strategies i.e. Lecture (L) and Tutorial (T) and others),
 - LI:** Laboratory Instruction (Includes Practical performances in laboratory workshop, field or other locations using different instructional strategies)
 - SW:** Sessional Work (includes assignment, seminar, mini project etc.),
 - SL:** Self Learning,
 - C:** Credits.

Note: SW & SL has to be planned and performed under the continuous guidance and feedback of teacher to ensure outcome of Learning.

Scheme of Examination

Theory

CODE	Course Code	Course Title	Internal Assessment		University Examination			Total
			Theory	Practical	Theory	Viva	Practical	
PCC	122BPT02	Human Physiology	20	20	100	20	40	200

COURSE-CURRICULUM DETAILING:

This course syllabus illustrates the expected learning achievements, both at the course and session levels, which students are anticipated to accomplish through various modes of instruction including Classroom Instruction (CI), Laboratory Instruction (LI), Sessional Work (SW), and Self Learning (SL). As the course progresses, students should showcase their mastery of Session Outcomes (SOs), culminating in the overall achievement of Course Outcomes (COs) upon the course's conclusion.

122BPT02.1: Find how to extend the basic concepts of general physiology, blood, skin and body temperature regulation

Hours

Item	Hrs
CI	25
LI	06
SW	05
SL	02
Total	38

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO1.1 Understand General Physiology</p> <p>SO1.2 Understand the WBC, RBC Platelets formation</p> <p>SO1.3 Analysis of Homeostasis, Immunity</p> <p>SO1.4 Analysis of Functional anatomy of the Skin</p> <p>SO1.5 Application of Physiological basis of Pyrexia and Hypothermia</p>	<p>1. Estimate of Haemoglobin, T.R.B.C., T.W.B.C. count (demonstration only), Study of Graphs</p> <p>2. Blood indices, Blood grouping, Bleeding & Clotting time (demonstration only]</p>	<p>Unit-1.0 GENERAL PHYSIOLOGY, BLOOD, SKIN AND BODY TEMPERATURE REGULATION</p> <p>1.1 Structure of cell</p> <p>1.2 membrane</p> <p>1.3 Transport</p> <p>1.4 cell membrane</p> <p>1.5 Functional morphology of the cell</p> <p>1.6 Intercellular communication</p> <p>1.7 Homeostasis</p> <p>1.8 Homeostasis</p> <p>1.9 W.B.C.</p> <p>1.10 W.B.C.</p> <p>1.11 R.B.C.</p> <p>1.12 R.B.C.</p> <p>1.13 Platelets formation</p> <p>1.14 functions Plasma</p> <p>1.15 Blood Groups</p> <p>1.16 Immunity</p> <p>1.17 Immunity</p> <p>1.18 Functional anatomy of the skin</p> <p>1.19 Skin</p> <p>1.20 its function</p> <p>1.21 Different mechanisms involved in body</p> <p>1.22 temperature regulation</p> <p>1.23 temperature regulation.</p> <p>1.24 Physiological basis of Pyrexia</p> <p>1.25 Hypothermia</p>	<p>1. Intercellular communication</p> <p>2. Blood Groups</p>

SW-1 Suggested Sectional Work

(SW): Assignments:

W.B.C., R.B.C., Platelets formation & functions

Mini Project:

Intercellular communication

Other Activities (Specify):
Different mechanisms involved in body temperature regulation.

122BPT02.2: Apply concepts regarding the types of cardio vascular system, cardio-respiratory adjustments in health & disease, exercise physiology

Hours

Item	Hrs
CI	30
LI	06
SW	06
SL	04
Total	46

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO2.1 To Understand cardio vascularsystem,</p> <p>SO2.2 To learn about cardio respiratory adjustments in health</p> <p>SO2.3 Application of Basic idea of Electrocardiogram and Interpretation of normal Electrocardiogram.</p> <p>SO2.4 Application of Arterial blood pressure and patho physiology of Hypertension</p> <p>SO2.5 Analysis of Exercise physiology in effects of acute & chronic exercises</p>	<p>1. Examination of pulse, B.P., respiratory rate, & measure study the effect of posture & exercise. Recording of arterial blood pressure – effects of change in posture & exercise on A.B.P</p> <p>2. Cardiac muscles O Simple myo-cardiogram. Effect of temperature on the myo cardiogram. Effect of drugs. All or none law. Staircase phenomenon.</p> <p>3. PhysiologyFitness A. Breathholding B. mercury column test, C. Cardiac efficiency test – Harvard step test – Master step test</p>	<p>Unit-2 CARDIO VASCULAR SYSTEM, CARDIO RESPIRATORY ADJUSTMENTS IN HEALTH & DISEASE, EXERCISE PHYSIOLOGY</p> <p>2.1 General introduction of cardiovascular systems.</p> <p>2.2 Structure and properties of Cardiac muscle.</p> <p>2.3 Dynamics of blood</p> <p>2.4 lymph flow</p> <p>2.5 Anatomical, biophysical consideration of arterial, arteriolar</p> <p>2.6 capillary venous level, Lymphaticcirculation</p> <p>2.7 Cardiac cycle</p> <p>2.8 Heart sounds, Mechanical events of Cardiac cycle</p> <p>2.9 Cardiac output, its regulation.</p> <p>2.10 Origin and spread of cardiac excitation</p> <p>2.11 Basic idea of Electrocardiogram</p> <p>2.12 Interpretation of normal Electrocardiogram.</p> <p>2.13 Cardiac output and cardiac failure.</p> <p>2.14 Venous return,</p> <p>2.15 Heart rate and its regulation.</p> <p>2.16 Structure and organization of vascular tree.</p> <p>2.17 Arterial blood pressure and patho physiology ofHypertension.</p> <p>2.18 Characteristic of Coronary circulation and patho-physiology of Coronary artery disease</p> <p>2.19 Capillary circulation and physiological basis ofEdema.</p> <p>2.20 Local & systemic regulatory mechanisms of CVS, humeral & neural</p> <p>2.21 Patho-physiology of Shock.</p> <p>2.22 Cerebral, coronary,</p> <p>2.23 splanchnic, skin,</p> <p>2.24 Placental &Fetal circulation</p>	<p>1. General introduction of cardiovascular systems</p> <p>2. Asthma, emphysema, artificial respiration</p> <p>3. Cardiac output and cardiac failure.</p>

		<p>2.25 Exercise, high altitude, deep sea diving Hypoxia, 2.26 hypercapnia, hypocapnia, oxygen treatment Asthma, emphysema, artificial respiration Effects of acute & chronic exercises Oxygen/CO₂ transport – O₂ debt. 2.27 Effects of Exercises on muscle strength, 2.28 power, 2.29 endurance, B.M.R., R.Q.- hormonal 2.30 metabolic effects respiratory & cardiac conditioning. Aging. Training, fatigue & recovery. Fitness- related to age, gender, & body type.</p>	
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SW-1 Suggested Sectional Work (SW):

Assignments:

Cardiac cycle and Heart sounds, Mechanical events of Cardiac cycle, Cardiac output, its regulation.

Mini Project:

Structure and organization of vascular tree. Basic idea of Electrocardiogram and Interpretation of normal Electrocardiogram.

Other Activities (Specify):

Effects of Exercises on muscle strength, power, endurance, B.M.R., R.Q.- hormonal & metabolic effects respiratory & cardiac conditioning.

122BPT02.3: Learn the basic concepts of the types of respiratory system, endocrine, reproductive system

Hours

Item	Hrs
CI	25
LI	06
SW	05
SL	04
Total	40

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO3.1 To Understand respiratory system,</p> <p>SO3.2 To learn about Endocrine system.</p> <p>SO3.3 To learn about reproductive system.</p> <p>SO3.4 Application of Pulmonary circulation, Respiratory membrane and Gas exchange in lungs</p> <p>SO3.5 Analysis of Functions and hypo & hyper secretion of hormones of</p> <p>a. Pituitary b. Thyroid c. Parathyroid d. Adrenal e. Endocrine part of pancreas.</p>	<p>1. Clinical examination of Respiratory system.</p> <p>2. Spirometry to measure various lung capacities & volumes, Respiratory rate, tidal volume, VC, timed VC, IRV, IC, ERV, EC on Spirometry (demonstration only)</p> <p>3. Spirometry : Lung volumes and capacities. Stethography Effect of deglutition, Effect of voluntary hyperventilation, Effect of exercise.</p>	<p>Unit-3 RESPIRATORY SYSTEM, ENDOCRINE, REPRODUCTIVE SYSTEM</p> <p>3.1 Functional anatomy of Respiratory System</p> <p>3.2 Physiological anatomy of lungs</p> <p>3.3 mechanics of respiration</p> <p>3.4 Mechanics of breathing</p> <p>3.5 Mechanism of inspiration</p> <p>3.6 Expiration intra-pleural</p> <p>3.7 intra-alveolar pressures, Compliance,</p> <p>3.8 Surfactant, Air-way resistance</p> <p>3.9 work of breathing</p> <p>3.10 Pulmonary circulation,</p> <p>3.11 Respiratory membrane Gas exchange in lungs Composition of gases</p> <p>3.12 Partial pressures.</p> <p>3.13 Oxygen and Carbon-dioxide transport.</p> <p>3.14 Other function of respiratory system</p> <p>3.15 Lung Volumes, Capacities , Lung function tests.</p> <p>3.16 Neural and Chemical control of breathing.</p> <p>3.17 Regulation of respiratory activity</p> <p>3.18 non- chemical influences on respiratory activity</p> <p>3.19 Physio-clinical aspects of Dyspnoea, Apnoea, Asphyxia, Hypoxia, Cyanosis, Breath holding, high and Low atmospheric pressures.</p> <p>3.20 Role of Hypothalamus as an endocrine gland. Functions and hypo & hyper secretion of hormones of</p> <p>a. Pituitary b. Thyroid c. Parathyroid d. Adrenal e. Endocrine part of pancreas.</p> <p>3.21 Male & female reproductive system</p>	<p>1. Composition of gases and Partial pressures.</p> <p>2. Oxygen and Carbon-dioxide transport.</p> <p>3. permatogenesis, Functions Testosterone</p>

		3.22 Spermatogenesis, Functions of Testosterone. 3.23 Ovarian and Menstrual Cycle and their hormonal control. Hormones of Ovary and their functions. 3.24 Physiological basis of Fertilization, Implantation, Pregnancy, Parturition and Lactation. 3.25 Contraception.	
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SW-1 Suggested Sectional Work (SW):

Assignments:

Functional anatomy of Respiratory System, Physiological anatomy of lungs, mechanics of respiration

Mini Project:

Regulation of respiratory activity, non-chemical influences on

respiratory activity **Other Activities (Specify):**

Physiological basis of Fertilization, Implantation, Pregnancy, Parturition and Lactation.

122BPT02.4: Recall the basic concepts of the renal system, digestive system, nerve – muscle and synaptic & junction transmission,

Hours

Item	Hrs
CI	30
LI	06
SW	05
SL	04
Total	45

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO4.1 To Understand respiratory system, SO4.2 To learn about Endocrine system. SO4.3 To learn about reproductive system. SO4.4 Application of Pulmonary circulation, Respiratory membrane and Gas exchange in lungs SO4.5 Analysis of Functions and hypo & hyper secretion of hormones of</p> <p>a. Pituitary b. Thyroid c. Parathyroid d. Adrenal e. Endocrine part of pancreas.</p>	<p>1.Skeletal muscles A. Simple muscle twitch B. Effect of increasing strength on SMT. C. Effect of increasing load on SMT. D. Effect of pre load & after load (Starling's law). E. Effect of temperature. F. Effect of two successive stimuli. G. Effect of fatigue. H. Effect of multiple stimuli & tetanus. 2.Cardiac muscles A. Simple myo-cardiogram. B. Effect of temperature on the myo-cardiogram. C. Effect of drugs. D. All or none law. E. Staircase phenomenon.</p>	<p>Unit-4 RENAL SYSTEM, DIGESTIVE SYSTEM, NERVE - MUSCLE AND SYNAPTIC & JUNCTION TRANSMISSION</p> <p>4.1 Functions of Kidney 4.2, Formation of Urine 4.3, Glomerular filtration rate, 4.4 Clearance 4.5 Tubular function 4.6 Water excretion 4.7 concentration of urine- 4.8 regulation of Na, Cl, K excretion 4.9 Physiology of urinary bladder, 4.10 Micturition- Neurogenic bladder. 4.11 Digestion & absorption of nutrients 4.12 Gastrointestinal secretions & their regulation Functions of 4.13 Saliva, 4.14 Gastric juice, 4.15 Pancreatic juice 4.16 Succus entericus, 4.17 Bile. 4.18 Movements of G.I.T. 4.19 Functions of Liver & Exocrine Pancreas 4.20 Nerve – General Concept Nerve cell – structure 4.21 Genesis of resting membrane potential & Action potential 4.22 Their ionic basis, All or None phenomenon Ionic basis of nerve conduction 4.23 Classification & types of nerve fibre 4.24 Mixed nerves & compound action potential 4.25 Concept of nerve injury &</p>	<p>Digestion & absorption of nutrients Movements of G.I.T. Concept of nerve injury & Wallerian degeneration Principal neurotransmitter system</p>

		<p>Wallerian degeneration</p> <p>4.26 Muscle properties an</p> <p>4.27 Functions Electric & Mechanical responses & their basis</p> <p>4.28 Concept of isometric & isotonic muscle contraction</p> <p>Electrical events in postsynaptic neurons Inhibition & facilitation at synapses</p> <p>4.29 Chemical transmission of synaptic activity Principal neurotransmitter system</p> <p>4.30. Neuromuscular junction, structure & events occurring during excitation.</p>	
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SW-1 Suggested Sectional Work(SW):

Assignments:

Physiology of urinary bladder, Micturition- Neurogenic bladder. Nerve cell – structure Mini Project:

Muscle properties and functions, Electric & Mechanical responses & their basis

Other Activities (Specify):

Chemical transmission of synaptic activity, Neuromuscular junction, structure & events occurring during excitation.

122BPT02.5: Relate the basic idea of the types of respiratory system, endocrine, reproductive system
Hours

Item	Hrs
CI	30
LI	06
SW	05
SL	04
Total	45

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO5.1 To Understand Nervous system SO5.2 To learn about Higher function of nervous system SO5.3 To learn about special senses SO5.4 Application of Ascending tracts of the Spinal cord and effects of their lesions. SO5.5 Analysis of Functions Autonomic nervous system & Hypothalamus.</p>	<p>1. Clinical examination of Central Nervous system. Special senses</p>	<p>Unit-5 NERVOUS SYSTEM (descriptive), HIGHER FUNCTIONS OF NERVOUS SYSTEM, SPECIAL SENSES 5.1 Organization of Nervous system. 5.2 Neuron and NeuralgiaSynapse: 5.3 Properties 5.4 Synaptic transmission. 5.5 Reflex arc, its components, properties 5.6 neurological impairments. 5.7 General sensations and their properties. 5.8 Ascending tracts of the Spinal cord 5.9 Effects of their lesions. 5.10 Pain and physiological Analgesia. 5.11 Motor neurons 5.12 Descending tracts and their applied aspects. 5.13 Regulation of Muscle Tone by Spinal mechanism 5.14 Supra-spinal mechanism. 5.15 Function of Brain -stem, 5.16 Cerebellum, 5.17 BasalGanglia 5.18 Motor cortex. 5.19 Control of Voluntary movement 5.20 Regulation of posture</p>	<p>1. General sensations and their properties. 2. Pain and physiological Analgesia. 3. Control of Voluntary movement 4. Learning, memory, speech and conditional reflexes.</p>

		<p>5.21 equilibrium, vestibular apparatus.</p> <p>5.22 Broad functions of Thalamus,</p> <p>5.23 Hypothalamus,</p> <p>5.24 Major lobes of Cerebral cortex</p> <p>5.25 Ascending Reticular Activation System Limbic System Learning, memory, speech and conditional reflexes.</p> <p>5.26 Reflexes, monosynaptic, polysynaptic, withdrawal reflex</p> <p>b. Properties of reflexes</p> <p>c. Sense organ, receptors, electrical & chemical events in receptors</p> <p>d. Ionic basis of excitation</p> <p>e. Sensory pathways for touch, temperature, pain, proprioception, others</p> <p>f. Control of tone & posture: Integration at spinal, brain stem, cerebellar, basal ganglion levels, along with their functions & clinical aspects</p> <p>5.27 Autonomic nervous system & Hypothalamus</p> <p>h. Functioning of Autonomic Nervous System with special reference to micturition, defecation and labour</p> <p>ii. Higher neural regulation of ANS.</p> <p>5.28 Learning & memory, neocortex, Limbic functions, sexual behaviour, fear & range, motivation</p> <p>5.29 Functional anatomy of the Eye</p> <p>Optics of Vision Retinal Function Visual Pathways</p> <p>5.30. Mechanism of Hearing. Sensation of Taste and Smell.</p>	
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SW-1 Suggested Sectional Work(SW):

Assignments:

Reflex arc, its components, properties, type and neurological impairments, Limbic functions, sexual behaviour, fear & range, motivation

Mini Project:

Visual Pathways, Mechanism of Hearing.

Other Activities (Specify):

Sensation of Taste and Smell, Control of tone & posture: Integration at spinal, brain stem, cerebellar, basal ganglion levels.

Brief of Hours suggested for the Course Outcome

Course Outcomes	Class Lecture (CI)	Laboratory Instruction (LI)	Sessional Work (SW)	Self-Learning (SI)	Total hour (CI+SW+SI)
122BPT02.1: Find how to extend the basic concepts of general physiology, blood, skin and body temperature regulation	25	06	05	02	38
122BPT02.2: Apply concepts regarding the types of cardio vascular system, cardio-respiratory adjustments in health & disease, exercise physiology.	30	06	06	04	46
BPT02.3: Learn the basic concepts of the types of respiratory system, endocrine, reproductive system	25	06	05	04	40
122BPT02.4 Recall the basic concepts of the renal system, digestive system, nerve – muscle and synaptic & junction transmission.	30	06	05	04	45
122BPT02.5 Relate the basic idea of the types of respiratory system, endocrine, reproductive system .	30	06	05	04	45
Total Hours	140	30	26	18	214

Suggestion for End Semester Assessment

Suggested Specification Table (For ESA)

CO	Unit Titles	Marks Distribution				Total Marks
		Ap	An	Ev	Cr	
CO-1	The basic concepts of general physiology, blood, skin and body temperature regulation					
CO-2	The types of cardio vascular system, cardio-respiratory adjustments in health & disease, exercise physiology					
CO-3	The types of respiratory system, endocrine, reproductive system					
CO-4	The renal system, digestive system, nerve – muscle and synaptic & junction transmission					
CO-5	The types of respiratory system, endocrine, reproductive system.					
Total						100

Legend: **Ap:** Apply, **An:** Analyze, **Ev:** Evaluate **Cr:** Create

Note. Detailed Assessment rubric need to be prepared by the course wise teachers for above tasks. Teachers can also design different tasks as per requirement, for end semester assessment.

Suggested Instructional/Implementation Strategies:

1. Improved Lecture
2. Tutorial
3. Case Method
4. Group Discussion
5. Role Play
6. Visit to Hospitals
7. Demonstration

Suggested Learning Resources:

(a) Books:

S. No.	Title	Author	Publisher	Edition & Year
1	Human Physiology	Chatterji, C. C	Pearson Education	2009
2	Textbook of Medical Physiology	Guyton, A.C. and Hall	W.B.Saunders,	2009
3	Understanding Medical Physiology	Bijlani, R L	Oxford University Press	First Edition
4	Applied Physiology	Keele, Cyril A, Samson Wright's	Oxford University Press	2006
5	Lecture note provided by Faculty of medical sciences, AKS University, Satna .			

Curriculum Development Team

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CO, POs and PSOs Mapping
Program title: B.P.T (Bachelor of physiotherapy)
Course code: 122BPT02
Course title: Human Physiology

Course outcome	Program outcomes												Program specific outcome			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO2	PSO3	PSO4
	Disciplinary knowledge	Psychomotor Skills	Communication skills	Critical thinking	Problem Solving	Analytical reasoning	Research – Related Skills	Co-operation /Team Work	Socio-cultural and multicultural competency	Awareness of moral, ethical and legal issues	Leadership qualities	Ongoing Learning:	Ability to Patient professional care .	Ability to Demonstrate clinical decision patient care	Ability to counsel the patients, family,colleagues and students aspects of physiotherapy treatment.	Ability to Work effectively in various professional collaborative places like hospital.
Co1: find how to extend the basic concepts of general physiology, blood, skin and body temperature regulation	2	2	1	1	2	2	2	1	2	1	2	1	1	2	2	2
co2: apply concepts regarding the types of cardio vascular system, cardiorespiratory adjustments in health & disease, exercise physiology	2	2	1	1	2	2	2	1	2	1	2	1	1	2	2	2
co3: learn the basic concepts of the types of respiratory system, endocrine, reproductive system	2	2	1	1	2	2	2	1	2	1	2	1	1	2	2	2
Co4 recall the basic concepts of the renal system, digestive system, nerve - muscle and synaptic & junction transmission	3	2	2	2	3	2	3	2	2	1	2	3	1	3	3	2
Co5 relate the basic idea of the types of respiratory system, endocrine, reproductive system	3	2	2	2	3	2	3	2	2	1	2	3	1	3	3	2

Legends: 1- Low, 2- Medium, 3- High

Course Curriculum Map:

POs & PSOs No.	COs No.& Titles	SOs No.	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	Co1: find how to extend the basic concepts of general physiology, blood, skin and body temperature regulation	SO1.1 SO1.2 SO1.3 SO1.4 SO1.5	Unit-1	Unit-1.0 the basic concepts of general physiology, blood, skin and body temperature regulation 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25	2
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	co2: apply concepts regarding the types of cardio vascular system, cardiorespiratory adjustments in health & disease, exercise physiology.	SO2.1 SO2.2 SO2.3 SO2.4 SO2.5	Unit-2	Unit-2 regarding the types of cardio vascular system, cardiorespiratory adjustments in health & disease, exercise physiology 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30	4
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	co3: learn the basic concepts of the types of respiratory system, endocrine, reproductive system	SO3.1 SO3.2 SO3.3 SO3.4 SO3.5	Unit-3	Unit-3 : the types of respiratory system, endocrine, reproductive system 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25	4
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	Co4 recall the basic concepts of the renal system, digestive system, nerve - muscle and synaptic & junction transmission	SO4.1 SO4.2 SO4.3 SO4.4 SO4.5	Unit-4:	Unit-4: the renal system, digestive system, nerve - muscle and synaptic & junction transmission 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30	4
PO: 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	Co5 relate the basic idea of the types of respiratory system, endocrine, reproductive system	SO5.1 SO5.2 SO5.3 SO5.4 SO5.5	Unit 5	Unit 5: the types of respiratory system, endocrine, reproductive system. 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30	4

YEAR 1

Course Code: 122BPT03

Course Title: Fundamental of physics, Biomechanics Biomechanical Modalities

Pre- requisite: Student should have basic knowledge of physics and biomechanics of body

Rationale: The students studying principles and practice Developing knowledge of energy, motion, and forces, Developing knowledge of movement analysis, biomechanical modeling, and simulation, the application of mechanical principles in medical treatments.

Course Outcomes:

Course Code:	122BPT03
Course Title:	Fundamental of physics, Biomechanics Biomechanical Modalities
Course Outcomes:	
122BPT03.1	Find how to extend the basic concepts of fundamentals of physics, biomechanics & exercise therapy
122BPT03.2	Apply concepts regarding the gravity, equilibrium, function classification of lever, pully system and elasticity
122BPT03.3	Learn the basic concepts of Elasticity- ,Springs, biomechanical modalities,. Normal Posture
122BPT03.4	Recall the basic concepts of the movements and exercise as therapeutic modality and their effects, physiological reaction of exercise
122BPT03.5	Relate the basic idea of Starting positions, muscle work, Importance of fundamental and derived types, Effects and uses of individual positions , Soft tissue manipulation

Scheme of Studies

CODE	Course Code	Course Title	Scheme of studies (Hours/Week)				Total Study Hours (CI+LI+SW+SL)
			C I	LI	SW	SL	
PCC	122BPT03	Fundamental of physics, Biomechanics Biomechanical Modalities	5	1	1	1	8

- Legend:**
- CI:** Classroom Instruction (Includes different instructional strategies i.e. Lecture (L) and Tutorial (T) and others),
 - LI:** Laboratory Instruction (Includes Practical performances in laboratory workshop, field or other locations using different instructional strategies)
 - SW:** Sessional Work (includes assignment, seminar, mini project etc.),
 - SL:** Self Learning,
 - C:** Credits.

Note: SW & SL has to be planned and performed under the continuous guidance and feedback of teacher to ensure outcome of Learning.

Scheme of Examination

Theory

CODE	Course Code	Course Title	Internal Assessment		University Examination			Total
			Theory	Practical	Theory	Viva	Practical	
PCC	122BPT 03	Fundamental of physics, Biomechanics Biomechanical Modalities	20	20	100	20	40	200

Course-Curriculum Detailing:

This course syllabus illustrates the expected learning achievements, both at the course and session levels, which students are anticipated to accomplish through various modes of instruction including Classroom Instruction (CI), Laboratory Instruction (LI), Sessional Work (SW), and Self Learning (SL). As the course progresses, students should showcase their mastery of Session Outcomes (SOs), culminating in the overall achievement of Course Outcomes (COs) upon the course's conclusion.

122BPT03.1; Find how to extend the basic concepts of fundamentals of physics, biomechanics & exercise therapy
Hours

Item	Hrs
CI	20
LI	12
SW	04
SL	02
Total	38

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
SO1.1 To Understand mechanics and biomechanics SO1.2 To learn about forces SO1.3 To learn composition of forces SO1.4 Application of momentum and their principle SO1.5 Analysis of friction	1 demonstration of equipments and modalities 2 joint (demonstration only) 3 Classification of forces Concurrent, 4. Coplanar Co-linear 5. Forces, Composition Resolution of forces 6 . Angle of pulls of muscle	1. Mechanics and biomechanics 1.1. The definition of mechanics 1.2. Biomechanics 1.3. Force - Definition, 1.4. Diagrammatic representation, 1.5. Diagrammatic representation 1.6. Classification of forces, 1.7. Classification of forces 1.8. Concurrent, 1.9. Coplanar 1.10. Co-linear 1.11. Forces, 1.12. Composition 1.13. Resolution of forces 1.14. Angle of pulls of muscle 1.15. Angle of pulls of muscle 1.16. Momentum – principles 1.17. Momentum Practical application 1.18. Friction principles 1.19. Practical application of Friction 1.20. Practical application of Friction	1. Learn the key points and all forces 2. Principle of momentum and friction in daily living

SW-1 Suggested Sectional Work

(SW): Assignments:

Movements

Mini Project:

Forces and their

composition **Other**

Activities

(Specify): Friction

122BPT03.2: Apply concepts regarding the gravity, equilibrium, function classification of lever, pulley system and elasticity

Hours

Item	Hrs
CI	20
LI	12
SW	04
SL	02
Total	38

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO2.1 To Understand gravity , line of gravity and centre of gravity.</p> <p>SO2.2 To learn about equilibrium.</p> <p>SO2.3 learn and understand the lever and their use</p> <p>SO2.4 learn about pulley systems and their application</p>	<p>1.demonstration of pulley and practical.</p> <p>2.Lever types</p> <p>3. Levers example on human body</p> <p>4. function, classification and application of levers in physiotherapy & order of levers</p> <p>6.Equilibrium</p>	<p>Unit-2 Understand about gravity , equilibrium , function classification of lever, pulley system and elasticity</p> <p>2.1. Gravity – Definition</p> <p>2.2. line of gravity</p> <p>2.3. line of gravity</p> <p>2.4. Centre of gravity.</p> <p>2.5. Centre of gravity</p> <p>2.6. Equilibrium</p> <p>2.7. Equilibrium</p> <p>2.8. Supporting base</p> <p>2.9. Supporting base,</p> <p>2.10. Types of equilibrium in static state</p> <p>2.11. dynamic state</p> <p>2.12. Levers - Definition,</p> <p>2.13. Levers types</p> <p>2.14. Levers example on human body</p> <p>2.15. function, classification and application of levers in physiotherapy & order of levers</p> <p>2.16. Pulleys</p> <p>2.17. Pulleys</p> <p>2.18. system of pulleys,</p> <p>2.19. types of pulleys,</p> <p>2.20. application of pulleys,</p>	<p>1. General introduction of gravity , equilibrium and lever</p> <p>2. Learn about pulley system</p>

SW-1 Suggested Sectional Work (SW):

Assignments:

Lever their types and pulley

Mini Project:

Pulleys - system of pulleys, types and application

Other Activities (Specify):

Equilibrium - Supporting base, types, and equilibrium in static and dynamic state

122BPT03.3: Learn the basic concepts of Elasticity, Springs, biomechanical modalities, Normal Posture -

Item	Hours
CI	20
LI	12
SW	04
SL	02
Total	38

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO3.1 To Understand elasticity</p> <p>SO3.2 To learn about spring and type</p> <p>SO3.3. To learn about biomechanical modalities</p> <p>SO3.4 Application of modalities</p> <p>SO3.5 Analysis of posture.</p>	<p>1. Practical all biomechanical modalities</p> <p>2. Posture and analysis of posture.</p> <p>3. Shoulder wheel</p> <p>4. Static cycle</p> <p>5. Ankle exerciser</p> <p>6. Springs</p>	<p>Unit-3 Elasticity - Springs, biomechanical modalities, Normal Posture</p> <p>3.1 Elasticity - Definition,</p> <p>3.2 Stress</p> <p>3.3 Strain</p> <p>3.4 HOOKE'S Law.</p> <p>3.5 Springs</p> <p>3.6 Properties of springs</p> <p>3.7 Springs in series</p> <p>3.8 Springs in parallel</p> <p>3.9 Elastic materials in use.</p> <p>3.10 Aims and scope of various biomechanical modalities</p> <p>3.11 Shoulder wheel</p> <p>3.12 Shoulder ladder</p> <p>3.13 Shoulder pulleys,</p> <p>3.14 Pronator-supinator instrument</p> <p>3.15 Static cycle</p> <p>3.16 Rowing machine</p> <p>3.17 Ankle exerciser, balancing board, springs, weights</p> <p>3.18 Normal Posture - definition</p> <p>3.19 Description, static and dynamic, alignments of various joints, centre of gravity</p> <p>3.20 Planes & muscular moments, and Analysis of posture</p>	<p>1. Composition and types of spring</p> <p>2. Learn about biomechanical modalities.</p> <p>3. Learn about posture and types of posture</p>

SW-1 Suggested Sectional Work

(SW) Assignments:

Aims and scope of various biomechanical modalities – shoulder wheel, shoulder ladder, shoulder pulleys,

Mini Project:

pronator-supinator instrument, static cycle, rowing machine, ankle exerciser, balancing board, springs, weights modalities

Other Activities (Specify):

Practicals of modality and pulley system.

122BPT03.4: Recall the basic concepts of the movements and exercise as therapeutic modality and their effects, physiological reaction of exercise.

Item	AppXH
CI	20
LI	12
SW	04
SL	02
Total	38

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO4.1 To Understand movements</p> <p>SO4.2 To learn about traction.</p> <p>SO4.3. To learn about normal gait</p> <p>SO4.4 Application of plane and axis</p> <p>SO4.5 Analysis of determinants of gait</p>	<p>1.Movements</p> <p>2 Anatomical</p> <p>3definition and description,</p> <p>4Movements and exercise as therapeutic modality</p> <p>5their effects,</p> <p>6Physiological reaction of exercise</p>	<p>Unit 4 Movements and exercise as therapeutic modality and their effects, Physiological reaction of exercise.</p> <p>4.1 Movements</p> <p>4.2 Anatomical</p> <p>4.3 definition And Description,</p> <p>4.4 movements And Exercise As Therapeutic Modality</p> <p>4.5their Effects,</p> <p>4.6physiological Reaction Of Exercise</p> <p>4.7traction</p> <p>4.8rationale,</p> <p>4.9technique</p> <p>4.10 Indications</p> <p>4.11 Contra-Indications</p> <p>4.12 Normal Gait</p> <p>4.13 Definition Description, Alignments,</p> <p>4.14 Centre Of Gravity During Gait Cycle.</p> <p>4.15 Planes & Muscle Acting Mechanisms, Pattern,</p> <p>4.16 Characteristics</p> <p>4.17 Normal Gait Cycle,</p> <p>4.18 Time & Distance Parameters,</p> <p>4.19 Determinants Of Gait.</p> <p>4.20 Planes & Muscle Acting Mechanisms, Pattern</p>	<p>1.Movements -</p> <p>2. Exercise as therapeutic modality and their effects</p>

SW-1 Suggested Sectional Work(SW): Assignments:
Gait cycle

Mini Project:
Traction

Other Activities
(Specify):
Movements

122BPT03.5: Relate the basic idea of Starting positions, muscle work, Importance of fundamental and derived types, Effects and uses of individual positions , Soft tissue manipulation

Item	Hour
CI	20
LI	12
SW	04
SL	02
Total	38

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO5.1 To Understand starting positions and derives position</p> <p>SO5.2 To learn about muscle work.</p> <p>SO5.3. To learn about effect of positions</p> <p>SO5.4 learn about soft tissue manipulation.</p> <p>SO5.5 indication and contraindication of techniques.</p>	<p>1. Demonstrat e starting positions</p> <p>2. Soft tissue manipulati on.</p> <p>3. Derived position</p> <p>4. Individual positions</p> <p>5. Muscle work</p> <p>6. Fundamental positions</p>	<p>Unit-5 - Starting positions, muscle work, Importance of fundamental and derived types, Effects and uses of individual positions, Soft tissue manipulation</p> <p>5.1 Starting positions</p> <p>5.2 Description and muscle work</p> <p>5.3 Importance of fundamental positions</p> <p>5.4 Importance derived positions types,</p> <p>5.5 Effects individual positions</p> <p>5.6 Uses of individual positions</p> <p>5.7 Effects and uses of individual positions</p> <p>5.8 Soft tissue manipulation</p> <p>5.9 Soft tissue manipulation</p> <p>5.10 Soft tissue manipulation</p> <p>5.11 History</p> <p>5.12 Definition,</p> <p>5.13 Types</p> <p>5.14 Their rationale,</p> <p>5.15 General effects,</p> <p>5.16 Local effects of individual manipulation (physiological effects)</p> <p>5.17 Uses,</p> <p>5.18 Contra-indications</p> <p>5.19 Techniques of application</p> <p>5.20 Techniques of application</p>	<p>1. Fundament positions</p> <p>2. History of manipulation</p>

SW-1 Suggested Sectional Work

(SW): Assignments:

Soft tissue manipulation

Mini Project:

Fundamental positions Other Activities

(Specify):

Starting position

Brief of Hours suggested for the Course Outcome

Course Outcomes	Class Lecture (CI)	Laboratory Instruction (LI)	Sessional Work (SW)	Self-Learning (SI)	Total hour (CI+SW+SI)
122BPT03.1: Find how to extend the basic concepts of fundamentals of physics, biomechanics & exercise therapy	20	12	04	02	38
122BPT03.2: Apply concepts regarding the gravity, equilibrium, function classification of lever, pulley system and elasticity	20	12	04	02	38
122BPT03.3: Learn the basic concepts of Elasticity - Springs, biomechanical modalities, Normal Posture	20	12	04	02	38
122BPT03.4: Recall the basic concepts of the movements and exercise as therapeutic modality and their effects, physiological reaction of exercise.	20	12	04	02	38
122BPT03.5: Relate the basic idea of Starting positions, muscle work, Importance of fundamental and derived types, Effects and uses of individual positions, Soft tissue manipulation	20	12	04	02	38
Total Hours	100	60	20	10	190

Suggestion for End Semester Assessment

Suggested Specification Table (For ESA)

CO	Unit Titles	Marks Distribution				Total Marks
		Ap	An	Ev	Cr	
CO-1	the basic concepts of fundamentals of physics, biomechanics & exercise therapy					
CO-2	the gravity, equilibrium, function classification of lever, pully system and elasticity					
CO-3	Elasticity - Springs, biomechanical modalities, Normal Posture					
CO-4	movements and exercise as therapeutic modality and their effects, physiological reaction of exercise					
CO-5	Starting positions, muscle work, Importance of fundamental and derived types, Effects and uses of individual positions , Soft tissue manipulation					
Total						100

Legend: **Ap: Apply,** **An: Analyze,** **Ev: Evaluate** **Cr: Create**

Note. Detailed Assessment rubric need to be prepared by the course wise teachers for above tasks. Teachers can also design different tasks as per requirement, for end semester assessment.

Suggested Instructional/Implementation Strategies:

1. Improved Lecture
2. Tutorial
3. Case Method
4. Group Discussion
5. Role Play
6. Visit to hospitals
7. Demonstration

Suggested Learning Resources:

(a) Books:

S. No.	Title	Author	Publisher	Edition & Year
1	Practical Exercise Therapy	1. Hollis, M. and Cook; P.F.,	CBS, New Delhi,	Latest Edition
2	Principles of Exercise Therapy	Gardiner, Dena	; CBS, New Delhi,	Latest Edition
3	Clinical Kinesiology for Physical Therapy	1. Lippert, Lynn	Jaypee New Delhi,	Latest Edition
4	Introduction to Physical Therapy	1. Pagliarulo, M.A.;	Mosby, London,	Latest Edition
5	Lecture note provided by Faculty of Medical sciences, AKS University, Satna.			

Curriculum Development Team

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2. Dr. Deajeet dutta Principal Department of paramedical science AKS University,
3. Dr Anil kumar mishra Head of the Department, Department of paramedical science
4. Dr. Brajesh kumar, Assistant Professor, Department of paramedical science
5. Dr. Poonam Singhariya, Assistant Professor, Department of paramedical science
6. Dr. R.M. Sharma, Assistant Professor, Department of paramedical science

CO, POs and PSOs Mapping
Program title: B.P.T (Bachelor of physiotherapy)
Course code 122BPT03

Course title: Fundamental of Physics, Biomechanics and biomechanical modalities.

Course outcomes	Program outcomes												Program specific outcome			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO2	PSO3	PSO4
	Disciplinary knowledge	Psychomotor Skills	Communication skills	Critical thinking	Problem Solving	Analytical reasoning	Research – Related Skills	Co-operation /Team Work	Socio-cultural and multicultural competency	Awareness of moral, ethical and legal issues	Leadership qualities	Ongoing Learning:	Ability to Patient professional care .	Ability to Demonstrate clinical decision and patient care	Ability to counsel the patients, family, colleagues and students aspects of physiotherapy treatment.	Ability to Work effectively in various professional collaborative places like hospital.
CO1 fundamentals of physics, biomechanics & exercise therapy	2	2	1	1	2	2	2	1	2	1	2	1	1	2	2	2
CO2: understand about gravity , equilibrium , function classification of lever, pulley system and elasticity	1	1	2	2	1	2	3	2	1	1	2	2	2	2	2	1
CO3 Elasticity - ,Springs, biomechanical modalities., Normal Posture	2	2	1	1	2	2	2	1	2	1	2	1	1	2	2	2
CO4 Movements and exercise as therapeutic modality and their effects, Physiological reaction of exercise.	1	1	2	2	3	2	3	2	2	1	3	2	2	3	3	1
CO5: Starting positions , muscle work, Importance of fundamental and derived types, Effects and uses of individual positions , Soft tissue manipulation	2	2	1	1	2	2	2	1	2	1	2	1	1	2	2	2

Legends: 1- Low, 2- Medium, 3- High

Course Curriculum Map:

POs & PSOs No.	COs No.& Titles	SOs No.	Laboratory Instruction (LI)	Classroom Instruction(CI)	Self Learning (SL)
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO-1: Define fundamentals of physics, biomechanics & exercise therapy	SO1.1 SO1.2 SO1.3 SO1.4 SO1.5	12	Unit-1.0 fundamentals of physics, biomechanics & exercise therapy 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20	2
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO 2 : Explain gravity , equilibrium , function classification of lever, pully system and elasticity	SO2.1 SO2.2 SO2.3 SO2.4 SO2.5	12	Unit-2 gravity , equilibrium , function classification of lever, pully system and elasticity 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20	2
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO3 : Illustrate the Elasticity - ,Springs, biomechanical modalities,. Normal Posture	SO3.1 SO3.2 SO3.3 SO3.4 SO3.5	12	Unit-3 : Elasticity - ,Springs, biomechanical modalities,. Normal Posture 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20	2
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO 4: Analyze the Movements and exercise as therapeutic modality and their effects, Physiological reaction of exercise..	SO4.1 SO4.2 SO4.3 SO4.4 SO4.5	12	Unit-4: Movements and exercise as therapeutic modality and their effects, Physiological reaction of exercise 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20	2
PO: 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO 5: Evaluate the Starting positions , muscle work, Importance of fundamental and derived types, Effects and uses of individual positions , Soft tissue manipulation	SO5.1 SO5.2 SO5.3 SO5.4 SO5.5	12	Unit 5: Starting positions , muscle work, Importance of fundamental and derived types, Effects and uses of individual positions , Soft tissue manipulation. 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20	2

YEAR 1

Course Code:	122BPT04
Course Title:	Fundamental of medical electronics and Principle of Bioelectrical modalities
Pre- requisite:	Student should have basic knowledge of physics, electronics and bioelectrical modalities
Rationale:	The students studying principles of interaction between electrical signals and biological tissue, electrical stimulation and recording techniques, bioelectricity in diagnosis, treatment, and research, development of new bioelectrical modalities and applications.

Course Outcomes:

Course Code:	122BPT04
Course Title:	Fundamental of medical electronics and Principle of Bioelectrical modalities
Course Outcomes:	
122BPT04.1	Find how to extend the basic concepts of the dc currents - a.c currents, quantity of electricity, magnitude of current, conductors and insulators, capacitors
122BPT04.2	Apply concepts regarding the brief description of rheostat, effects of electric current, magnetism, electromagnetism lenz's law, inductor and inductance
122BPT04.3	Learn the basic concepts of electronic devices ,thermionic valves
122BPT04.4	Recall the basic concepts of the general intoduction bioelectrical modalities and medical instrumentation for physical therapy
122BPT04.5	Relate the basic idea of knowledge regarding microwave diathermy,ultrasound,. Actino-therapy – infrared

Scheme of Studies

CODE	Course Code	Course Title	Scheme of studies (Hours/Week)				Total Study Hours (CI+LI+SW+SL)
			C I	LI	SW	SL	
PCC	122BPT04	Fundamental of medical electronics and Principle of Bioelectrical modalities	5	1	1	1	8

Legend: **CI:** Classroom Instruction (Includes different instructional strategies i.e. Lecture (L) and Tutorial (T) and others),
LI: Laboratory Instruction (Includes Practical performances in laboratory workshop, field or other locations using different instructional strategies)
SW: Sessional Work (includes assignment, seminar, mini project etc.),
SL: Self Learning,
C: Credits.

Note: SW & SL has to be planned and performed under the continuous guidance and feedback of teacher to ensure outcome of Learning.

Scheme of Examination

Theory

CODE	Course Code	Course Title	Internal Assessment		University Examination			Total
			Theory	Practical	Theory	Viva	Practical	
PCC	122BP T04	Fundamenta l of medical electronics and Principle of Bioelectrical modalities	20	20	100	20	40	200

Course-Curriculum Detailing:

This course syllabus illustrates the expected learning achievements, both at the course and session levels, which students are anticipated to accomplish through various modes of instruction including Classroom Instruction (CI), Laboratory Instruction (LI), Sessional Work (SW), and Self Learning (SL). As the course progresses, students should showcase their mastery of Session Outcomes (SOs), culminating in the overall achievement of Course Outcomes (COs) upon the course's conclusion.

122BPT04.1 Find how to extend the basic concepts of the dc currents - a.c currents, quantity of electricity, magnitude of current, conductors and insulators, capacitors.

Hours.

Item	Hrs
CI	23
LI	12
SW	01
SL	04
Total	40

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>So1.1 to understand introduction of dc currents</p> <p>So1.2 to learn about a.c currents</p> <p>so1.3. To learn quantity of electricity</p> <p>So1.4 application of capacitors</p> <p>So1.5 analysis capacitor with application of each in physiotherapy department</p>	<p>1.show electromeg nat ic field (repulsion and attraction field)</p> <p>2.amplitud e and phase of a sine waves</p> <p>3.introducti on of capacitors</p> <p>4.electric field around a capacitor</p> <p>5.otential difference and emf</p> <p>6.electric field around a capacitor</p>	<p>Unit1:dc currents - a.c currents, quantity of electricity, magnitude of current, conductors and insulators, capacitors</p> <p>1.1.introduction of dc currents.</p> <p>1.2.fundamentals of d.c currents (proton and electron)</p> <p>1.3.modern concept of electricity.</p> <p>1.4.bound and free electrons, free electrons and current, static electric charge.</p> <p>1.5.charging of an object, potential and capacitance.</p> <p>1.6.potential difference and emf.</p> <p>1.7.a.c currents</p> <p>1.8.introduction,defination and,functions of a.c current.</p> <p>1.9.sinusoidal wave from, frequency, wavelength.</p> <p>1.10. Amplitude and phase of a sine waves.</p> <p>1.11.average & rms value of a sine wave</p> <p>1.12quantity of electricity,</p> <p>1.13introduction and production of electricity.</p> <p>1.14quality of electricity</p> <p>Magnitude of current,.</p> <p>1.15.conducters, insulators.</p> <p>1.16. Ohms law,resistances in series and paralle.l</p> <p>1.4 Capacitors:</p> <p>1.17introduction of capacitors</p> <p>1.18working of capacitors and their mechanics</p>	<p>1. Development of electricity by defferent scientist</p> <p>2. Phisical hazards</p>

		1.19.electric field around a capacitor 1.20charging and discharging of capacitor 1.21scientific uses of charging 1.22discharging of capacitor 1.23types of capacitor with application of each in physiotherapy department 1.5.1. Uses of capacitors 1.5.2. Applications in diagnostics as well as source of errors 1.5.3. Importance and scientific uses of uses of capacitors in physiotherapy dpt.	
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SW-1 Suggested Sectional Work (SW):

Assignments:

Draw And explain all About

Electromagnetic Field. Mini Project:

Rheostat Electrical

Equipment. Other

Activities

(Specify):

Draw And explain all About A.C And D.C Current, Required In Machine Present

In Physiotherapy Lab . Draw And Label The Diagram Of Capacitor

122BPT04.2 Apply concepts regarding the brief description of rheostat, effects of electric current, magnetism, electromagnetism lenz's law, inductor and inductance

Hours.

Item	Hrs
CI	23
LI	12
SW	01
SL	04
Total	40

Session Out comes (sos)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO2.1 To Understand Introduction Of rheostat</p> <p>SO2.2 To learn about Effects of electric current in thermal effect.</p> <p>SO2.3. To learn magnetism</p> <p>SO2.4 Application of Electromagnetism,</p> <p>SO2.5 Analysis Inductor and Inductance Physiotherapy department</p>	<p>1. Show Electromagnetic Field (Repulsion And Attraction Field)</p> <p>2. Demonstration Of A.c And D.C Current</p> <p>3. Demonstration Of Electromagnetic Field</p> <p>4. Theory Of Magnetic Effects Of Electric Current</p> <p>5. Lenz's law</p> <p>6. Causes and its prevention by electric current.</p>	<p>UNIT 2 RHEOSTAT, EFFECTS OF ELECTRIC CURRENT, MAGNETISM, ELECTROMAGNETISM</p> <p>2.1 Rheostat: Series and shunt rheostat</p> <p>2.2 Application of series and shunt rheostat in physiotherapy dept.</p> <p>2.3, Effects of electric current in thermal effect.</p> <p>2.4 Effect of chemical in electric current.</p> <p>2.5 Effect of magnetic in electric current.</p> <p>2.6 Electric shock by electric current.</p> <p>2.7 Earth shock by electric current.</p> <p>2.8 Causes and its prevention by electric current.</p> <p>2.9 magnetism:</p> <p>2.10 magnetism: magnetic - non-magnetic substances and their properties</p> <p>2.11. properties of magnet</p> <p>2.12 molecular theory of magnet.</p> <p>2.13 poles of magnet and its properties.</p> <p>2.14. magnetic lines of force and their properties.</p> <p>2.15 Electromagnetism,</p> <p>2.16 theory of electromagnet and effect Of Magnetism.</p> <p>2.17 Theory Of Magnetic Effects Of Electric Current</p> <p>2.18 Electromagnetic Induction.</p> <p>2.19 Lenz's law,</p> <p>2.20 Lenz's law</p> <p>2.21 Inductor and Inductance</p> <p>2.22 Types of inductor</p> <p>2.23 Reactance and impedance</p>	<p>1. Effect of magnetic in electric current</p> <p>2. Electric shock by electric current</p> <p>3. Magnetic lines of force and their properties.</p>

SW-1 Suggested Sectional Work (SW):

Assignments:

Rheostat: Series and shunt rheostat

Mini Project:

Rheostat Electrical Equipment.

Other Activities (Specify):

Theory Of Magnetic Effects of Electric Current

122BPT04.3– Learn the basic concepts of electronic devices, thermionic valves.

Hours

Item	Hrs
CI	12
LI	12
SW	01
SL	04
Total	29

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO3.1 To Understand Introduction Of Thermionic emission</p> <p>SO3.2 To learn about Construction and application of Cathode Ray Oscilloscope</p> <p>SO3.3. To learn Extrinsic semiconductors</p> <p>SO3.4 Application of Advantages Transistors devices,</p> <p>SO3.5 Analysis semiconductor devices over thermionic valve</p>	<p>1. Diode and Triode valves.</p> <p>2. Light Emitting Diodes</p> <p>3. Semiconductor Devices</p> <p>4. Cathode Ray Oscilloscope</p> <p>5. Light Emitting diode</p> <p>6. Extrinsic semiconductors</p>	<p>UNIT 3:- ELECTRONIC DEVICES, THERMIONIC VALVE</p> <p>3.1 Thermionic Valves</p> <p>3.2 Thermionic emission,</p> <p>3.3 Diode and Triode valves</p> <p>3.4 Diode And Triode characteristics</p> <p>3.5 Construction and application of Cathode Ray Oscilloscope</p> <p>3.6. Semi conductor Devices.</p> <p>3.7 Intrinsic semiconductors</p> <p>3.8 Extrinsic semiconductors</p> <p>3.9 Advantages of diode</p> <p>3.10 Advantages Transistors devices</p> <p>3.11 Basing of Diode and their characteristics</p> <p>3.12 Light Emitting diodesintegrated circuits, Advantage of semiconductor devices over thermionic valve</p>	<p>1. Diode and Triode valves</p> <p>2. Semiconductor Devices</p> <p>3. Light Emitting Diodes</p>

SW-1 Suggested Sectional Work (SW):

Assignments:

1. draw a labelled diagram of diode and triode valves.
2. draw a labelled diagram of cathode ray oscilloscope.

Mini Project:

- Draw A Labelled Diagram of Semiconductor Other Activities (Specify):
- Advantage of semiconductor devices over thermionic valve

122BPT04.4: Recall the basic concepts of the general introduction bioelectrical modalities and medical instrumentation for physical therapy

Hours.

Item	Hrs
CI	19
LI	12
SW	02
SL	03
Total	36

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO4.1 To Understand Introduction And History Of Development Of Bioelectrical Modalities</p> <p>SO4.2 To learn about Low frequency currents</p> <p>SO4.3. To learn Direct currents</p> <p>SO4.4 Application of Medium frequency currents</p> <p>SO4.5 Analysis of Short wave Diathermy</p>	<p>1.Circuit diagrams and testing</p> <p>2.SWD Therapy</p> <p>3. MWD</p> <p>4.Applications Of SWD</p> <p>5.circuit diagrams and testing</p> <p>6.Low frequency currents</p>	<p>UNIT 4 BIOELECTRICAL MODALITIES AND MEDICAL INSTRUMENTATION FOR PHYSICAL THERAPY:</p> <p>4.1 Introduction And History Of Development Of Bioelectrical Modalities</p> <p>4.2. Medical Instrumentation For Physical Therapy</p> <p>4.3Brief description of generation</p> <p>4.4 circuit diagrams and testing</p> <p>4.5Low frequency currents</p> <p>4.6Direct currents</p> <p>4.7Medium frequency currents</p> <p>4.8Short wave Diathermy</p> <p>4.9-continuous and pulsed.</p> <p>4.10Introduction SWD With The Development History</p> <p>4.11Structure of swd</p> <p>4.12 Functioning Of SWD.</p> <p>4.13Biomedical Importance</p> <p>4.14.Applications Of SWD.</p> <p>4.15Indication</p> <p>4.16 Contraindication Of SWD.</p> <p>4.17 Risk Factors Of SWD.</p> <p>4.18 Macheanical Complication</p> <p>4.19 Errors During Application Of SWD.</p>	<p>1Biomedical Importance Of SWD</p> <p>2. Biomedical Importance Of MWD</p> <p>3. Biomedical Importance Of low frequency current</p>

SW-1 Suggested Sectional Work (SW):

Assignments:

1.draw a labelled diagram of swd circuit.

Mini Project:

1.Draw A Labelled Diagram Of low frequency currents Other Activities

(Specify):

Medium frequency currents

122BPT04.5 Relate the basic idea of knowledge regarding microwave diathermy, ultrasound, Actino-therapy – infrared

Hours.

Item	Hrs
CI	23
LI	12
SW	03
SL	07
Total	45

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO5.1 To Understand Introduction Of Microwave Diathermy</p> <p>SO5.2 To learn about Effects of ultrasound.</p> <p>SO5.3. To learn actino-therapy.</p> <p>SO5.4 Application of ultraviolet radiation therapy</p> <p>SO5.5 Analysis of laser therapy</p>	<p>1. Demonstration of Microwave Diathermy.</p> <p>2. Demonstration of ultrasound</p> <p>3, Principles of infrared radiation</p> <p>Principles of ultraviolet radiation.</p> <p>5. LASER</p> <p>6. Physiological effects in laser</p>	<p>Unit.5 Microwave Diathermy.</p> <p>5.1 Ultrasound</p> <p>5.2 Introduction of ultrasound</p> <p>Principals of ultrasound</p> <p>5.3 structure of ultrasound</p> <p>5.4 Indications of ultrasound</p> <p>Contraindications of ultrasound</p> <p>5.5 Applications of ultrasound</p> <p>5.6 Risk factors and dangers of ultrasound</p> <p>5.7 Actino-therapy.</p> <p>5.8 introduction of infrared radiation</p> <p>5.9. principals of infrared radiation</p> <p>5.10. structure of infrared radiation</p> <p>indication of infrared radiation</p> <p>contraindication of infrared radiation</p> <p>5.11 application of types of infrared radiation</p> <p>Risk factors and dangers of types of infrared radiation.</p> <p>5.12 Introduction of types of generators</p> <p>principals of types of generators</p> <p>Structure of types of generators</p> <p>5.13 indications of types of generators</p> <p>Contraindications of u types of generators</p> <p>Applications of types of generators</p> <p>5.14 Risk factors and dangers of types of generators</p> <p>5.15 introduction of UVR</p> <p>Principals of UVR</p> <p>5.16. Structure of UVR</p> <p>5.17 indication of UVR</p> <p>5.18. Contraindication of UVR</p> <p>Application of types of UVR</p> <p>5.19. Risk factors and dangers of types of UVR</p> <p>5.20. Introduction laser</p> <p>5.21. Principal of laser, productions & instrumentation</p> <p>5.22. Classification of laser</p> <p>5.23. Physiological effects in laser.</p>	<p>1. Introduction of ultrasound</p> <p>2. Introduction of infrared radiation</p> <p>3. Introduction of UVR</p>

**SW-1 Suggested
Sectional Work (SW):**

Assignments:

1. draw a labelled diagram of mwd circuit

Mini Project:

1. Draw a labelled diagram of
ultrasound Other Activities

(Specify):

Ultraviolet radiation

Brief of Hours suggested for the Course Outcome

Course Outcomes	Class Lecture (CI)	Laboratory Instruction (LI)	Sessional Work (SW)	Self Learning (SI)	Total hour (CI+SW+SI)
122BPT04.1: Find how to extend the basic concepts of the dc currents - a.c currents, quantity of electricity, magnitude of current, conductors and insulators, capacitors	23	12	01	04	40
122BPT04.2: Apply concepts regarding the brief description of rheostat, effects of electric current, magnetism, electromagnetism lenz's law, inductor and inductance .	23	12	01	04	40
122BPT04.3: Learn the basic concepts of electronic devices ,thermionic valves	12	12	01	04	29
122BPT04.4: Recall the basic concepts of the general introduction bioelectrical modalities and medical instrumentation for physical therapy.	19	12	02	03	36
122BPT04.5: Relate the basic idea of knowledge regarding microwave diathermy,ultrasound, Actino-therapy – infrared	23	12	03	07	45
Total Hours	100	60	08	22	190

Suggestion for End Semester Assessment

Suggested Specification Table (For ESA)

CO	Unit Titles	Marks Distribution				Total Marks
		Ap	An	Ev	Cr	
CO-1	the basic concepts of the dc currents - a.c currents, quantity of electricity, magnitude of current, conductors and insulators, capacitors					
CO-2	the brief description of rheostat, effects of electric current, magnetism, electromagnetism lenz's law, inductor and inductance					
CO-3	basic concepts of electronic devices ,thermionic valves					
CO-4	the basic concepts of the general introduction bioelectrical modalities and medical instrumentation for physical therapy					
CO-5	the basic idea of knowledge regarding microwave diathermy,ultrasound,. Actino-therapy – infrared.					
Total						100

Legend: Ap: Apply, An: Analyze, Ev: Evaluate Cr: Create

Note. Detailed Assessment rubric need to be prepared by the course wise teachers for above tasks. Teachers can also design different tasks as per requirement, for end semester assessment.

Suggested Instructional/Implementation Strategies:

1. Improved Lecture
2. Tutorial
3. Case Method
4. Group Discussion
5. Role Play
6. Visit to hospitals.
7. Demonstration

Suggested Learning Resources:

(a) Books:

S. No.	Title	Author	Publisher	Edition & Year
1	Clayton's Electrotherapy: Theory and Practice	Froster, A. and Palastanga, N	AITBS, Delhi,	Latest Edition
2	Electrotherapy Explained: Principles	Jhon, Low and Ann, Reed;	Butterworth Heine, Oxford	Latest Edition
3	Clinical Electrotherapy	Nelson, R.M. and Currier, D.P.;	Appleton and Lange,	Latest Edition
4	Physical Agents in Rehabilitation y	Chemeron, M.H.	W B Saunders, London,	Latest Edition
5	Lecture note provided by Faculty of medical sciences, AKS University, Satna.			

Curriculum Development Team

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4. Dr. Brajesh kumar, Assistant Professor , Department of paramedical science
5. Dr. Poonam Singhariya, Assistant Professor , Department of paramedical science
6. Dr. R.M. Sharma , Assistant Professor , Department of paramedical science

CO, POs and PSOs Mapping
Program title: B.P.T (Bachelor of physiotherapy)
Course code122BPT04

Course title: Fundamental of medical electronics and Principle of Bioelectrical modalities

Course outcomes	Program outcomes												Program specific outcome			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO2	PSO3	PSO4
	Disciplinary knowledge	Psychomotor Skills	Communication skills	Critical thinking	Problem Solving	Analytical reasoning	Research – Related Skills	Co-operation /Team Work	Socio-cultural and multicultural competency	Awareness of moral, ethical and legal issues	Leadership qualities	Ongoing Learning:	Ability to Patient professional care .	Ability to Demonstrate clinical decision and patient care	Ability to counsel the patients, family, colleagues and students aspects of physiotherapy treatment.	Ability to Work effectively in various professional collaborative places like hospital.
CO1: Find how to extend the basic concepts of the dc currents - a.c currents, quantity of electricity, magnitude of current, conductors and insulators, capacitors	3	2	2	2	3	2	3	2	2	1	2	3	1	3	3	2
co2: Apply concepts regarding the brief description of rheostat, effects of electric current, magnetism, electromagnetism lenz's law, inductor and induct	3	2	2	2	3	2	3	2	2	1	2	3	1	3	3	2
co3 : Learn the basic concepts of electronic devices ,thermionic valves	1	1	2	2	3	2	3	2	2	1	3	2	2	3	3	1
CO4 Recall the basic concepts of the general introduction bioelectrical modalities and medical instrumentation for physical therapy	3	2	2	2	3	2	3	2	2	1	2	3	1	3	3	2
CO5: : Relate the basic idea of knowledge regarding microwave diathermy,ultrasound,. Actino-therapy – infrared	1	1	2	2	3	2	3	2	2	1	3	2	2	3	3	1

Legends: 1- Low, 2- Medium, 3- High

Course Curriculum Map:

POs & PSOs No.	COs No.& Titles	SOs No.	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO-1: Find how to extend the basic concepts of the dc currents - a.c currents, quantity of electricity, magnitude of current, conductors and insulators, capacitors	SO1.1 SO1.2 SO1.3 SO1.4 SO1.5	12	Unit-1.0 the basic concepts of the dc currents - a.c currents, quantity of electricity, magnitude of current, conductors and insulators, capacitors 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23	4
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO 2 : Apply concepts regarding the brief description of rheostat, effects of electric current, magnetism, electromagnetism lenz's law, inductor and induct.	SO2.1 SO2.2 SO2.3 SO2.4 SO2.5	12	Unit-2 the brief description of rheostat, effects of electric current, magnetism, electromagnetism lenz's law, inductor and inductance 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23	4
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO3 : Learn the basic concepts of electronic devices ,thermionic valves	SO3.1 SO3.2 SO3.3 SO3.4 SO3.5	12	Unit-3 : basic concepts of electronic devices ,thermionic valves 1,2,3,4,5,6,7,8,9,10,11,12	4
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO 4: Recall the basic concepts of the general introduction bioelectrical modalities and medical instrumentation for physical therapy.	SO4.1 SO4.2 SO4.3 SO4.4 SO4.5	12	Unit-4: the basic concepts of the general introduction bioelectrical modalities and medical instrumentation for physical therapy 1,2,3,4,5,6,7,8,9,10,11,12,13,14, 15,16,17,18,19	3
PO: 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO 5: Relate the basic idea of knowledge regarding microwave diathermy,ultrasound,. Actino-therapy – infrared	SO5.1 SO5.2 SO5.3 SO5.4 SO5.5	12	Unit 5: the basic idea of knowledge regarding microwave diathermy,ultrasound,. Actino-therapy – infrared.. 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23	7

YEAR 1

Course Code: 122BPT05

Course Title: Psychology and Sociology

Pre- requisite: Student should have basic knowledge of understand human behavior, social structures,

Rationale: The students studying principles and practice . human behavior, thoughts, and emotions, Developing knowledge of mental health, well-being, and mental disorders, Appreciating the principles of learning, motivation, and development, Enhancing understanding of social interactions, relationships, and group dynamics 1. social structures, institutions, and relationships, Developing knowledge of social inequality, diversity, and cultural differences, Appreciating the principles of social change, development, and policy, Enhancing understanding of social organizations, communities, and global societies

Course Outcomes:

Course Code:	122BPT05
Course Title:	Psychology and Sociology
Course Outcomes:	
122BPT05.1	Find how to introduce and scope of psychology, field of application and influence of heredity, and about in psychology
122BPT05.2	Apply concepts of regarding emotion, attitudes and behavior factors in attitude changes, personality theories and factor influencing personality
122BPT05.3	Learn the basic concepts of communication, emotional and behavior disorders of childhood, mental deficiency, anxiety disorders
122BPT05.4	Recall the basic concepts of sociology and social factors in health and disease, socialization, social groups and family
122BPT05.5	Relate the basic idea of of culture and health, social change, social problems of disabled and social security

Scheme of Studies

CODE	Course Code	Course Title	Scheme of studies (Hours/Week)				Total Study Hours (CI+LI+SW+SL)
			CI	LI	SW	SL	
PCC	122BPT05	Psychology and Sociology	6	0	1	1	8

- Legend:**
- CI:** Classroom Instruction (Includes different instructional strategies i.e. Lecture (L) and Tutorial (T) and others),
 - LI:** Laboratory Instruction (Includes Practical performances in laboratory workshop, field or other locations using different instructional strategies)
 - SW:** Sessional Work (includes assignment, seminar, mini project etc.),
 - SL:** Self Learning,
 - C:** Credits.

Note: SW & SL has to be planned and performed under the continuous guidance and feedback of teacher to ensure outcome of Learning.

Scheme of Examination

Theory

CODE	Course Code	Course Title	Internal Assessment		University Examination			Total
			Theory	Practical	Theory	Viva	Practical	
PCC	122BPT05	Psychology and sociology	20	-	80	-	-	100

Course-Curriculum Detailing:

This course syllabus illustrates the expected learning achievements, both at the course and session levels, which students are anticipated to accomplish through various modes of instruction including Classroom Instruction (CI), Laboratory Instruction (LI), Sessional Work (SW), and Self Learning (SL). As the course progresses, students should showcase their mastery of Session Outcomes (SOs), culminating in the overall achievement of Course Outcomes (COs) upon the course's conclusion.

122BPTH05.1 Find how to introduce and scope of psychology, field of application and influence of heredity, and about in psychology.

Hours.

Item	Hrs
CI	29
LI	00
SW	02
SL	04
Total	35

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>So1.1 Understand Introduction And Scope of psychology.</p> <p>SO1.2 Understand the learning theories and principles.</p> <p>SO1.3 Acquire Knowldge of memory theories and improve memory.</p> <p>SO1.4 Acquire Knowldge of learn about thinking process and problem solving</p> <p>SO1.5 Application of motivation theories and types.</p>		<p>Unit 1: Introduction And Scope Of Psychology, Field Of Application And Influence Of Heredity, And About In Psychology</p> <p>1.1 what Is Psychology.</p> <p>1.2 Field Of Application of Psychology,</p> <p>1.3 influence Of Heredity</p> <p>1.3 Environment On The Individual.</p> <p>1.5 learning –</p> <p>1.6 theories</p> <p>1.7 principles Learning</p> <p>1.8 memory,</p> <p>1.9 Forgetting,</p> <p>1.10 Theories Of Memory</p> <p>1.11 Forgetting,</p> <p>1.12 Thinking</p> <p>1.13 Methods To Improve Memory</p> <p>1.14 thinking –</p> <p>1.15 process,</p> <p>1.16 problem Solving,</p> <p>1.17 decision Making</p> <p>1.18 creative Thinking</p> <p>1.19 motivation –</p> <p>1.20 theories</p> <p>1.21 types Of Motivation</p> <p>1.22 eotions –</p> <p>1.23 theories Of Emotions</p> <p>1.24 stress</p> <p>1.25 attitudes –</p> <p>1.26 theories,</p>	<p>1. Introduction about psychology and influences of heredity</p> <p>2. Introduction of learning and principles of learning.</p> <p>3. Motivation.</p>

	1.27attitudes 1.28 Behavior, 1.29factors In Attitude Changes.	
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**SW-1 Suggested Sectional
Work (SW): Assignment:**

**Scope of psychology,
principles of learning Mini**

Project:

Thinking process and decision making.

Other Activities (Specify):

Thinking – process,

122BPTH05.2 Apply concepts of regarding emotion, attitudes and behavior factors in attitude changes, personality theories and factor influencing personality

Hours.

Item	Hrs
CI	28
LI	00
SW	03
SL	04
Total	29

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO2.1 Understand about intelligence theories.</p> <p>SO2.2 Understand theories of personality and factors influencing personalities.</p> <p>SO2.3 Analysis of growth and development in infancy, childhood, adolescence, adulthood and old age.</p> <p>SO2.4 Analysis of normal and abnormal behavior.</p> <p>SO2.5 Application of counseling aims and principles.</p>		<p>Unit 2: Acquire Knowledge of regarding emotion, attitudes and behavior factors in attitude changes, personality theories and factor influencing personality.</p> <p>2.1 Intelligence</p> <p>2.2 Theories Of Intelligence.</p> <p>2.3. Personality</p> <p>2.4 Theories Of Personality,</p> <p>2.5 Factors Influencing Personality.</p> <p>2.6 Development And Growth Of Behavior In Infancy</p> <p>2.7 Child Hood,</p> <p>2.8 Adolescence,</p> <p>2.9 Adult Hood</p> <p>2.10 Old Age.</p> <p>2.11 Behavior – Normal</p> <p>2.12 Abnormal.</p> <p>2.13 Counseling –</p> <p>2.14 Definition,</p> <p>2.15 Aims</p> <p>2.16 Principles.</p> <p>2.17 Psychotherapy –</p> <p>2.18 Brief Introduction To Paradigms In Psychopathology</p> <p>2.19 Brief Introduction To Paradigms In Psychopathology</p> <p>2.20 Brief Introduction To Paradigms In Psychopathology</p> <p>2.21 Brief Introduction To Paradigms In Psychopathology Therapy.</p> <p>2.22 Brief Introduction To Paradigms In Psychopathology Therapy</p> <p>2.23 Psychological Need Of Children</p> <p>2.24 Psychological Need Of Children</p> <p>2.25 Psychological Need Of Children</p> <p>2.26 Geriatric Patient.</p> <p>2.27 Geriatric Patient</p> <p>2.28 Geriatric Patient</p>	<ol style="list-style-type: none"> Intelligence theories Personality theories Development and growth of behavior in children. Psychotherapy.

SW-1 Suggested Sectional Work (SW):

Assignments:

Psychological need of children and geriatric patient

Mini Project

Counseling

Other Activities (Specify):

Assessment of normal and abnormal behavior.

122BPTH05.3 Learn the basic concepts of communication, emotional and behavior disorders of childhood, mental deficiency, anxiety disorders.

Hours.

Item	Hrs
CI	30
LI	00
SW	02
SL	06
Total	31

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO3.1 Understand about Communication effective and faulty.</p> <p>SO3.2 To learn emotional and behavioral disorders of childhood and adolescence.</p> <p>SO3.3 To learn mental deficiency.</p> <p>SO3.4 Analysis of anxiety disorders.</p> <p>SO3.5 Application of psychological disorders.</p>		<p>Unit3: COMMUNICATION, EMOTIONAL, MENTAL DEFICIENCY, ANXIETY DISORDERS, SOMATOFORM AND DISSOCIATE DISORDERS, PERSONALITY DISORDER, PATHO - PHYSIOLOGICAL DISORDERS AND SEVERE PSYCHOLOGICAL DISORDERS.</p> <p>3.1 Communication–</p> <p>3.2 Effective And Faulty.</p> <p>3.3 Emotional And Behavioral Disorders Of Childhood</p> <p>3.4 And Adolescence</p> <p>3.5 Disorder Of Under And Over Controlled Behavior.</p> <p>3.6 Eating Disorders.</p> <p>3.7 Mental Deficiency</p> <p>3.8 Mental Retardation</p> <p>3.9 Learning Disabilities</p> <p>3.10 Autistic Behavior.</p> <p>3.11 Autistic Behavior</p> <p>3.12 Anxiety Disorders</p> <p>3.13 Anxiety Disorders</p> <p>3.14 Phobias, Panic Disorder</p> <p>3.15 Phobias, Panic Disorder</p> <p>3.16 Generalized Anxiety Disorder</p> <p>3.17 Obsessive Compulsive Disorder.</p> <p>3.18 Post – Traumatic Stress Disorder.</p> <p>3.19 Somatoform And Dissociate Disorders</p> <p>3.20 Conversion Disorder</p> <p>3.21 Somatization Disorder</p> <p>3.22 Dissociate Amnesia And Dissociate Fugue.</p> <p>3.23 Personality Disorder.</p> <p>3.24 Patho – Physiological Disorders</p>	<p>1. Effective Communication.</p> <p>2. Somatoform and dissociate disorders.</p>

		3.25 Stress And Health. 3.26 Severe Psychological Disorders 3.27 Mood Disorder, 3.28 Mood Disorder 3.29 Psychosis. 3.30 Psychosis	
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SW-1 Suggested Sectional Work (SW):

Assignment

s:

Personality disorders.

Mini

Project:

Severe psychological disorders. Other

Activities (Specify):

Assessment of

122BPTH05.4 Recall the basic concepts of sociology and social factors in health and disease, socialization, social groups and family.

Hours.

Item	Hrs
CI	35
LI	00
SW	01
SL	03
Total	22

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO4.1 To Understand about meaning of sociology and social psychology.</p> <p>SO4.2 To learn methods of sociology case study.</p> <p>SO4.3 Analysis of importance its study to health care professional.</p> <p>SO4.4 Analysis of diagnosis of viral sample.</p> <p>SO4.5 Application of Meaning of social factors and role of social factor and illness.</p>		<p>Unit 4: sociology and social factors in health and disease, socialization, social groups and family.</p> <p>4.1 Meaning – definition and</p> <p>4.2 scope of sociology.</p> <p>4.3 Sociology relation with anthrology,</p> <p>4.4 psychology, social psychology and ethics.</p> <p>4.5 Methods of sociology case study,</p> <p>4.6 social survey, questionnaire,</p> <p>4.7 interview and opinion poll methods.</p> <p>4.8 Importance of its study with special reference to health care professional.</p> <p>4.9 The meaning of social factors.</p> <p>4.10 The role of social factors and illness.</p> <p>4.11 Meaning and nature of socialization .</p> <p>4.12 Primary, secondary, and</p> <p>4.13 anticipatory socialization.</p> <p>4.14 Agencies of socialization.</p> <p>4.15 Concept of social group.</p> <p>4.16 Influence of formal and</p> <p>4.17 informal groups on health and sickness.</p> <p>4.18 The roll of primary groups and</p> <p>4.19 secondary groups in the hospital and</p> <p>4.20 rehabilitation setting.</p> <p>4.21 The family – meaning and</p> <p>4.22 definition, function.</p> <p>4.23 Changing family patterns.</p> <p>4.24 Influence of family on the individual health,</p> <p>4.25 family and nutrition.</p> <p>4.26 The effect of sickness on family and psychosomatic disease</p> <p>4.27 The effect of sickness on family and psychosomatic disease</p> <p>4.28 The effect of sickness on family and psychosomatic disease</p> <p>4.29 their importance to physiotherapy</p> <p>4.30 their importance to physiotherapy.</p> <p>4.31 Rural community – meaning and features –</p>	<p>1. scope of sociology and relation of psychology, social psycholog and ethics.</p> <p>2. Concept of social groups.</p>

		4.32 health hazards of rural population 4.33 Urban community – meaning and features – 4.34 Urban community – meaning and features 4.35 health hazards of urban population.	
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SW-1 Suggested Sectional Work (SW):

Assignments:

The effect of sickness on family and psychosomatic disease and their importance of physiotherapy.

Mini Project:

Rural community features and urban community features

Other Activities (Specify):

Assessment of rural and urban community.

122BPTH.5.5 Relate the basic idea of of culture and health, social change, social problems of disabled and social security.

Hours

Item	Hrs
CI	38
LI	00
SW	04
SL	04
Total	29

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO5.1 Understand about concept of culture and behavior.</p> <p>SO5.2 Understand cultural meaning of sickness and health disorder.</p> <p>SO5.3 Learn about social changes and factors of social changes.</p> <p>SO5.4 Understand about social changes and health program and the role of social planning in the improvement of health and in rehabilitation.</p> <p>SO5.5 Application of social security and social legislation in relation to the disabled.</p>		<p>Unit 5: culture and health, social change, social problems of disabled and social security.</p> <p>5.1 Concept of culture</p> <p>5.2 Concept of culture</p> <p>5.3 Cultures and behavior</p> <p>5.4 Cultures and behavior</p> <p>5.5 Cultural meaning of sickness</p> <p>5.6 Cultural meaning of sickness</p> <p>5.7 Culture and health disorders.</p> <p>5.8 Culture and health disorders</p> <p>5.9 Meaning of social changes and factors of social change.</p> <p>5.10 Meaning of social changes and factors of social change</p> <p>5.11 Human adaptation and social change</p> <p>5.12 Human adaptation and social change.</p> <p>5.13 Social change and stress.</p> <p>5.14 Social change and stress</p> <p>5.15 Social and deviance.</p> <p>5.16 Social and deviance.</p> <p>5.17 Social change and health program.</p> <p>5.18 Social change and health program</p> <p>5.19 The role of social planning in the improvement of health and in rehabilitation.</p> <p>5.20 The role of social planning in the improvement of health and in rehabilitation</p> <p>5.21 Population explosion.</p> <p>5.22 Population explosion</p> <p>5.23 Poverty and unemployment.</p> <p>5.24 Poverty and unemployment</p> <p>5.25 Beggary.</p> <p>5.26 Beggary</p> <p>5.27 Juvenile delinquency.</p> <p>5.28 Juvenile delinquency</p> <p>5.29 Prostitution</p> <p>5.30 Prostitution</p> <p>5.31 Alcoholism.</p> <p>5.32 Alcoholism.</p>	<p>1. Population explosion.</p> <p>2. Juvenile delinquency.</p> <p>3. Problem of women in employment.</p>

		<p>5.33 Problem of women in employment. 5.34 Problem of women in employment 5.35 Problem of women in employment 5.36 Social security and social legislation in relation to the disabled. 5.37 Social security and social legislation in relation to the disabled 5.38 Social security and social legislation in relation to the disabled</p>	
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SW-1 Suggested Sectional Work (SW):

Assign

ments:

Prostitution.

Mini

Project:

Alcoholism.

sm.

Other Activities (Specify):

Proverty and unemployment

Brief of Hours suggested for the Course Outcome

Course Outcomes	Class Lecture (CI)	Sessional Work (SW)	Self-Learning (SI)	Total hour (CI+SW+SI)
122BPT05.1: Find how to introduce and scope of psychology, field of application and influence of heredity, and about in psychology	29	1	1	31
122BPT05.2: Apply concepts of regarding emotion, attitudes and behavior factors in attitude changes, personality theories and factor influencing personality .	28	1	1	30
122BPT05.3: Learn the basic concepts of communication, emotional and behavior disorders of childhood, mental deficiency, anxiety disorders	30	1	1	32
122BPT05.4: Recall the basic concepts of sociology and social factors in health and disease, socialization, social groups and family..	35	1	1	37
122BPT05.5: Relate the basic idea of of culture and health, social change, social problems of disabled and social security	38	1	1	40
Total Hours	160	05	05	170

**Suggestion for End Semester Assessment
Suggested Specification Table (For ESA)**

CO	Unit Titles	Marks Distribution				Total Marks
		Ap	An	Ev	Cr	
CO-1	Introduce and scope of psychology, field of application and influence of heredity, and about in psychology					
CO-2	Emotion, attitudes and behavior factors in attitude changes, personality theories and factor influencing personality					
CO-3	Communication, emotional and behavior disorders of childhood, mental deficiency, anxiety disorders					
CO-4	Basic concepts of sociology and social factors in health and disease, socialization, social groups and family					
CO-5	Culture and health, social change, social problems of disabled and social security.					
Total						20

Legend: **Ap: Apply,** **An: Analyze,** **Ev: Evaluate** **Cr: Create**

Note. Detailed Assessment rubric need to be prepared by the course wise teachers for above tasks. Teachers can also design different tasks as per requirement, for end semester assessment.

Suggested Instructional/Implementation Strategies:

1. Improved Lecture
2. Tutorial
3. Case Method
4. Group Discussion
5. Role Play
6. Visit to hospitals
7. Demonstration

Suggested Learning Resources:

(a) **Books:**

S. No.	Title	Author	Publisher	Edition & Year
1	Introduction to Psychology	Morgon, Clifford T;	Tata Mcg. Hill, Delhi	2009
2	Introduction to Psychology	Farnald, L.D. AITBS, Delhi	AITBS, Delhi	2009
3	Modern Clinical Psychology Principals	1. Korchin, Sheldon J	CBS, New Delhi	First Edition
4	Behavioral Sciences in Medical Practice	Mehta, Manju	Jaypee, New Delhi	2006
5	Lecture note provided by Faculty of medical sciences, AKS University, Satna .			

Curriculum Development Team

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CO, POs and PSOs Mapping
Program title: B.P.T (Bachelor of physiotherapy)
Course code122BPT05
Course title: Psychology and sociology

Course outcomes	Program outcomes												Program specific outcome			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO2	PSO3	PSO4
	Disciplinary knowledge	Psychomotor Skills	Communication skills	Critical thinking	Problem Solving	Analytical reasoning	Research – Related Skills	Co-operation /Team Work	Socio-cultural and multicultural competency	Awareness of moral, ethical and legal issues	Leadership qualities	Ongoing Learning:	Ability to Patient professional care .	Ability to Demonstrate clinical decision and patient care	Ability to counsel the patients, family, colleagues and students aspects of physiotherapy treatment.	Ability to Work effectively in various professional collaborative places like hospital.
CO 1: Find how to introduce and scope of psychology, field of application and influence of heredity, and about in psychology	1	1	2	2	3	2	1	2	2	1	3	2	2	.	3	1
CO2: Apply concepts of regarding emotion, attitudes and behavior factors in attitude changes, personality theories and factor influencing personality .	1	1	2	2	1	2	.	2	1	1	2	2	2	.	2	1
CO3 Learn the basic concepts of communication, emotional and behavior disorders of childhood, mental deficiency, anxiety disorders	2	2	1	1	2	2	2	1	2	1	2	1	1	2	2	2
CO4 Recall the basic concepts of sociology and social factors in health and disease, socialization, social groups and family	3	2	2	2	3	2	1	2	2	1	2	2	1	1	3	2
CO5 Culture and health, social change, social problems of disabled and social security	.	.	.	1	1	3	.	3	1	1	2	2	1	1	1	3

Legends: 1- Low, 2- Medium, 3- High

Course Curriculum Map:

POs & PSOs No.	COs No.& Titles	SOs No.	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO-1: Define introduce and scope of psychology, field of application and influence of heredity, and about in psychology	SO1.1 SO1.2 SO1.3 SO1.4 SO1.5		Unit-1.0 introduce and scope of psychology, field of application and influence of heredity, and about in psychology 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29	4
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO 2 : Explain the emotion, attitudes and behavior factors in attitude changes, personality theories and factor influencing personality ..	SO2.1 SO2.2 SO2.3 SO2.4 SO2.5		Unit-2 emotion, attitudes and behavior factors in attitude changes, personality theories and factor influencing personality 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28	4
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO3 : Illustrate the concept of communication, emotional and behavior disorders of childhood, mental deficiency, anxiety disorders	SO3.1 SO3.2 SO3.3 SO3.4 SO3.5		Unit-3 : communication, emotional and behavior disorders of childhood, mental deficiency, anxiety disorders 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30	6
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO 4: Analyze the basic concepts of sociology and social factors in health and disease, socialization, social groups and family.	SO4.1 SO4.2 SO4.3 SO4.4 SO4.5		Unit-4: the basic concepts of sociology and social factors in health and disease, socialization, social groups and family.e 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35	3
PO: 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO 5: Evaluate the Culture and health, social change, social problems of disabled and social security	SO5.1 SO5.2 SO5.3 SO5.4 SO5.5		Unit 5: Culture and health, social change, social problems of disabled and social security. 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38	4

CURRICULUM BPT SECOND YEAR

Course Code: 122BPT21

Course Title: Pathology and Microbiology

Pre- requisite: Student should have basic knowledge of Diseases and microbes which causes disease

Rationale: The students studying principles and practice of the nature of diseases and their effects on the body, Developing knowledge of disease diagnosis, classification, and treatment, principles of tissue and cell injury, inflammation, and repair, understanding of cancer, genetics, and molecular pathology, the biology of microorganisms, including bacteria, viruses, and fungi, Developing knowledge of microbial structure, function, and behavior, Appreciating the principles of microbial growth, reproduction, and transmission.

Course Outcomes:

Course Code:	122BPT21
Course Title:	Pathology and Microbiology
Course Outcomes:	
122BPT21.1	Find how to introduce and scope of the character of general pathology, concept of diseases, cell injury, degeneration, necrosis inflammation and repair, degeneration, vitamin
122BPT21.2	Apply concepts regarding the brief description of vascular disturbance, blood disorder, neoplasia, respiratory disease and cardiovascular system
122BPT21.3	Learn the basic concepts of brief description alimentary system, CNS and PNS musculoskeletal system, muscle, urinary system, prostate, endocrine, salivary gland
122BPT21.4	Recall the basic concepts of the general microbiology
122BPT21.5	Relate the basic idea of systemic microbiology

Scheme of Studies

CODE	Course Code	Course Title	Scheme of studies (Hours/Week)				Total Study Hours (CI+LI+SW+SL)
			CI	LI	SW	SL	
PCC	122BPT21	Pathology and Microbiology	6	0	1	1	8

Legend: **CI:** Classroom Instruction (Includes different instructional strategies i.e. Lecture (L) and Tutorial (T) and others),
LI: Laboratory Instruction (Includes Practical performances in laboratory workshop, field or other locations using different instructional strategies)
SW: Sessional Work (includes assignment, seminar, mini project etc.),
SL: Self Learning,
C: Credits.

Note: SW & SL has to be planned and performed under the continuous guidance and feedback of teacher to ensure outcome of Learning.

Scheme of Examination

Theory

CODE	Course Code	Course Title	Internal Assessment		University Examination			Total
			Theory	Practical	Theory	Viva	Practical	
PCC	122BPT21	Pathology and Microbiology	20	--	80	--	--	100

Course-CurriculumDetailing:

This course syllabus illustrates the expected learning achievements, both at the course and session levels, which students are anticipated to accomplish through various modes of instruction including Classroom Instruction (CI), Laboratory Instruction (LI), Sessional Work (SW), and Self Learning (SL). As the course progresses, students should showcase their mastery of Session Outcomes (SOs), culminating in the overall achievement of Course Outcomes (COs) upon the course's conclusion.

122BPT21.1: Find how to introduce and scope of the character of general pathology, concept of diseases, cell injury, degeneration, necrosis inflammation and repair, degeneration, vitamins

Hours

Item	Hrs
CI	17
LI	00
SW	02
SL	01
Total	20

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO1.1 Understand Aims and objectives of study of pathology.</p> <p>SO1.2 Understand the Concept of Diseases, Classification of Lesions.</p> <p>SO1.3 Analysis of Concept of Diseases, Classification of Lesions.</p> <p>SO1.4 Analysis of Brief concepts of inflammation and Repair, Degeneration Necrosis and Gangrenes. Inflammation Definition, vascular and cellular phenomenon, differences between transudate and exudate granuloma.</p> <p>SO1.5 Application of Deficiency Diseases vitamin A, vitamin B, vitamin C, vitamin D.</p>	NA	<p>Unit-1.0 UNDERSTAND THE CHARACTER OF GENERAL PATHOLOGY, CONCEPT OF DISEASES, CELL INJURY, DEGENERATION, NECROSIS INFLAMMATION AND REPAIR, DEGENERATION, VITAMIN</p> <p>1.1. Aims of study of pathology</p> <p>1.2. Objectives of study of pathology</p> <p>1.3. Classification of Lesions.</p> <p>1.4. Degeneration</p> <p>1.5. Concept of Diseases</p> <p>1.6. Brief outline of cell injury,</p> <p>1.7. Necrosis</p> <p>1.8. Gangrene.</p> <p>1.9. Brief concepts of inflammation</p> <p>1.10. Cell Repair</p> <p>1.11. Inflammation Definition,</p> <p>1.12. Vascular phenomenon</p> <p>1.13. Cellular phenomenon,</p> <p>1.14. Differences between transudate and exudates</p> <p>1.15. Granuloma.</p> <p>1.16. Deficiency Diseases vitamin A, vitamin B</p> <p>1.17. Deficiency Diseases vitamin C, vitamin D.</p>	<p>1. Degeneration,</p> <p>2. Necrosis And Gangrene.</p>

SW-1 Suggested Sectional Work (SW):

Assignments:

Inflammation And Repair, Degeneration, Necrosis

Mini Project:

Transudate And Exudate, Granuloma.

Other Activities (Specify):

Deficiency Diseases vitamin A, vitamin B, vitamin C, vitamin.

122BPT21.2: Apply concepts regarding the brief description of vascular disturbance, blood disorder, neoplasia, respiratory disease and cardiovascular system

Hours

Item	Hrs
CI	17
LI	00
SW	02
SL	01
Total	20

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO2.1 To Understand Vascular disturbances: Oedema, Thrombosis, Embolism, Hemorrhage and Shock.</p> <p>SO2.2 To learn about Blood Disorder: Anemia, Leukemia, Hemorrhagic disorders</p> <p>SO2.3 Application of Neoplasia</p> <p>SO2.4 Application of Respiratory system diseases</p> <p>SO2.5 Analysis of Cardiovascular system disease</p>	NA	<p>Unit-2 BRIEF DESCRIPTION OF VASCULAR DISTURBANCE, BLOOD DISORDER, NEOPLASIA, RESPIRATORY DISEASE AND CARDIOVASCULAR SYSTEM</p> <p>2.1 Vascular disturbances</p> <p>2.2 Oedema</p> <p>2.3 Thrombosis</p> <p>2.4 Embolism</p> <p>2.5 Hemorrhage</p> <p>2.6 Shock.</p> <p>2.7 Blood Disorder: Anemia</p> <p>2.8 Leukemia</p> <p>2.9 Hemorrhagic disorders.</p> <p>2.10 Neoplasia</p> <p>2.11 Brief overview of Tumors Definition,</p> <p>2.12 Tumors Classification</p> <p>2.13 Etiology</p> <p>2.14 spread of tumors, Benign versus Malignant tumors</p> <p>2.15 In brief about: A. Respiratory system diseases- Etio-pathogenesis, gross pathology of conditions - aging , Pneumonia, Bronchitis, Bronchiectasis, COPD, Asthma, Emphysema, Pulmonary Tuberculosis, Lung cancers, Restrictive Lung disease and Occupational Lung diseases B.</p> <p>2.16 Cardiovascular system: – Etio-pathogenesis, gross pathology of conditions- aging, IHD, myocardial infarction, CCF, HT</p> <p>2.17 Rheumatic heart disease, Congenital heart disease, Arteriosclerosis, Thrombo-angitis, Vasomotor- Raynaud's, venous thrombosis, Gangrene, Lymph edema</p>	<p>1. Anemia, Leukemia, Hemorrhagic disorders.</p> <p>2. Respiratory system diseases</p>

SW-1 Suggested Sectional Work (SW):

Assignments:

Neoplasia: Brief overview of Tumors, Definition, Classification.

Mini Project:

Respiratory system diseases- Etio-pathogenesis, gross pathology of conditions. Other Activities (Specify):

Cardiovascular system: – Etio-pathogenesis, gross pathology of condition

122BPT21.3: Learn the basic concepts of brief description alimentary system, cns and pns musculoskeletal system, muscle, urinary system, prostate, endocrine, salivary gland

Hours

Item	Hrs
C1	17
LI	00
SW	02
SL	01
Total	20

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>So3.1 to understand alimentary system</p> <p>So3.2 to learn about cns and pns musculoskeletal system, muscle</p> <p>So3.3. To learn about urinary system</p> <p>So3.4 application of prostate, endocrine,</p> <p>So3.5 analysis of salivary gland</p>	NA	<p>Unit-3 BRIEF DESCRIPTION ALIMENTARY SYSTEM, CNS AND PNS MUSCULOSKELETAL SYSTEM, MUSCLE, URINARY SYSTEM, PROSTATE, ENDOCRINE, SALIVARY GLAND</p> <p>3.1 Brief description of Alimentary system Peptic ulcer</p> <p>3.2 Carcinoma of stomach</p> <p>3.3 Ulcerative lesions of Intestine.</p> <p>3.4 Liver – Hepatitis Cirrhosis</p> <p>3.5 Hepatoma.</p> <p>3.6 Pancreas – Pancreatitis</p> <p>3.7 Carcinoma of Pancreas</p> <p>3.8 Diabetes.</p> <p>3.9 Details about CNS and PNS: Etio-pathogenesis,</p> <p>3.10.gross pathology of conditions - Aging, Meningitis, Encephalitis</p> <p>3.11 Parkinson’s, Amyotrophic lateral sclerosis, Ataxias, Multiple Sclerosis, stroke, Neuropathies (Carcoat Marie Tooth’s disease, Compression and entrapments, diabetic, G.B syndrome),</p> <p>3.12 Poliomyelitis and post-polio syndrome, Myasthenia Gravis, brief outline of C.N.S. Tumours and peripheral nerve lesions.</p> <p>3.13.Musculoskeletal system (Bones and Joints): Etio-pathogenesis, gross pathology of conditions - osteomalacia, Osteoporosis, Osteomyelitis, Osteoarthritis, rheumatoid arthritis, Gout, spondyloarthropathy, Osteonecrosis, bone tumors, Myofascial pain syndrome. Biological responses to trauma, bone and soft tissue immobilization</p> <p>3.14Muscle – Poliomyelitis, Myopathies, Volkman’s ischemic contracture.</p> <p>3.15.Skin – Scleroderma, Psoriasis, Autoimmune disorders.</p> <p>3.16 In brief about Urinary system – Nephrotic syndrome, Nephritis, Glomerulonephritis.</p> <p>3.17Prostate –Prostatitis, BPH, Carcinoma of Prostate</p> <p>Endocrine – Thyroid, Thyroiditis, Thyroid Tumours.</p> <p>Salivary gland – Salivary gland tumours</p>	<p>1. Liver – Hepatitis, Cirrhosis and Hepatoma</p>

SW-1 Suggested Sectional Work (SW):

Assignments:

Nephrotic syndrome, Nephritis, Glomerulonephritis

Mini Project:

Poliomyelitis, Myopathies, Volkman’s ischemic contracture. Skin – Scleroderma, Psoriasis,

Other Activities (Specify):

Autoimmune disorders

122BPT21.4: Recall the basic concepts of the general microbiology

Hours

Item	Hrs
CI	19
LI	00
SW	02
SL	01
Total	22

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO4.1 To Understand Introduction and historical background</p> <p>SO4.2 To learn about Classification of Microorganisms</p> <p>SO4.3. To learn Morphology of bacteria.</p> <p>SO4.4 Application of Morphology of bacteria</p> <p>SO4.5 Analysis of Immunity – Antigens and Antibodies, General overview of antigen antibody reaction.</p>		<p>UNIT-4 GENERAL MICROBIOLOGY</p> <p>4.1. Introduction of microbiology</p> <p>4.2. historical background of microbiology</p> <p>4.3. Defination of Microorganisms.</p> <p>4.4. Classification of Microorganisms</p> <p>4.5. Classification of Microorganisms</p> <p>4.6. Classification of Microorganisms</p> <p>4.7. Defination of bacteria</p> <p>4.8. Morphology of bacteria.</p> <p>4.9. Classification of bacteria.</p> <p>4.10. Classification of bacteria</p> <p>4.11. Classification of bacteria</p> <p>4.12. Classification of bacteria</p> <p>4.13. Sterilization</p> <p>4.14. disinfect ion.</p> <p>4.15. Immunity</p> <p>4.16. Types of Immunity</p> <p>4.17. Antigens</p> <p>4.18. Antibodies, General overview</p> <p>4.19. antigen antibody reaction and practical applications</p>	<p>1. Classification of Microorganisms</p>

SW-1 Suggested Sectional Work (SW):

Assignments:

Morphology of bacteria

Mini Project:

Immunity – Antigens and Antibodies, General overview of antigen antibody reaction Other Activities (Specify):

Classification of Microorganisms

122BPT21.5: Relate the basic idea of systemic microbiology

Hours

Item	Hrs
C1	30
LI	00
SW	05
SL	04
Total	39

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO5.1 To Understand Systemic Microbiology</p> <p>SO5.2 To learn about Gram Positive cocci, Gram-negative cocci</p> <p>SO5.3 To learn about Gram positive bacilli, Gram negative bacilli</p> <p>SO5.4 Application of Anaerobic non – sporing cocci and bacilli</p> <p>SO5.5 Analysis of Virology, Spirochetes, Malaria,</p>	NA	<p>Unit-5 Systemic Microbiology</p> <p>5.1 Gram Positive cocci</p> <p>5.2 Staph, Strepto, Pneumococci.</p> <p>5.3 Gram-negative cocci</p> <p>5.4 Goncocci</p> <p>5.5 Meningococci.</p> <p>5.6 Gram positive bacilli – Tubercule bacilli</p> <p>5.7 Lepra bacilli</p> <p>5.8 Clostridium tetani</p> <p>5.9 Clostridium perfringens.</p> <p>5.10 Gram negative bacilli – Salmonella</p> <p>5.11 Coloforms</p> <p>5.12 Pseudomonas</p> <p>5.13 proteus etc.</p> <p>5.14 Anaerobic non – sporing cocci</p> <p>5.15 Anaerobic non – sporing bacilli.</p> <p>5.16 Virology – General introduction, brief description of polio virus,</p> <p>5.17 Rubella</p> <p>5.18 Hepatitis-B</p> <p>5.19 AIDS (diagnosis, prevention and treatment).</p> <p>5.20 Spirochetes- Syphilis (congenital and acquired).</p> <p>5.21 Malaria</p> <p>5.22 Mycology</p> <p>5.23 Actinomycosis</p> <p>5.24 Maduramycosis</p> <p>5.25 Mucosal Candidiasis</p> <p>5.26 Applied microbiology as relevant to diseases of bones</p> <p>5.27 Joints</p> <p>5.28 Muscles</p> <p>5.29 Skin, Infection</p> <p>5.30 Burns.</p>	<p>1. Gram-negative cocci – Goncocci and Meningococci.</p> <p>2. Gram positive bacilli</p> <p>3. Tubercule bacilli, Lepra</p> <p>4. bacilli, Clostridium tetani, Clostridium perfringens.</p>

SW-1 Suggested Sectional Work (SW):

Assignments:

Gram positive bacilli – Tubercule bacilli, Lepra

Mini Project:

Virology – General introduction

Other Activities (Specify):

Spirochetes- Syphilis

Brief of Hours suggested for the Course Outcome

Course Outcomes	Class Lecture (CI)	Sessional Work (SW)	Self-Learning (SI)	Total hour (CI+SW+SI)
122BPT21.1: Define the character of general pathology, concept of diseases, cell injury, degeneration, necrosis inflammation and repair, degeneration, vitamin	17	2	1	20
122BPT21.2: Explain the brief description of vascular disturbance, blood disorder, neoplasia, respiratory diseaseand cardiovascular system.	17	2	1	20
122BPT21.3 Illustrate brief description alimentary system, cns and pns musculoskeletal system, muscle, urinary system, prostate, endocrine, salivary gland	17	2	1	20
122BPT21.4: Recall the basic concepts of the general microbiology	19	2	1	22
122BPT21.5: Relate the basic idea of systemic microbiology.	30	5	4	39
Total Hours	100	13	8	121

**Suggestion for End Semester Assessment
Suggested Specification Table (For ESA)**

CO	Unit Titles	Marks Distribution				Total Marks
		Ap	An	Ev	Cr	
CO-1	the character of general pathology, concept of diseases, cell injury, degeneration, necrosis inflammation and repair, degeneration, vitamin					
CO-2	the brief description of vascular disturbance, blood disorder, neoplasia, respiratory disease and cardiovascular system .					
CO-3	fbrief description alimentary system, cns and pns musculoskeletal system, muscle, urinary system, prostate, endocrine, salivary gland					
CO-4	the basic concepts of the general microbiology					
CO-5	The basic idea of systemic microbiology.					
Total						20

Legend: Ap: Apply, An: Analyze, Ev: Evaluate Cr: Create

Note. Detailed Assessment rubric need to be prepared by the course wise teachers for above tasks. Teachers can also design different tasks as per requirement, for end semester assessment.

Suggested Instructional/Implementation Strategies:

1. Improved Lecture
2. Tutorial
3. Case Method
4. Group Discussion
5. Role Play
6. Visit to hospitals
7. Demonstration

Suggested Learning Resources:

(a) **Books:**

S. No.	Title	Author	Publisher	Edition & Year
1	Textbook of Microbiology	Chakraborty, P. NCB, Calcutta	NCB, Calcutta	1999
2	Text Book of Microbiology	1 Ananth Narayan, R.	Orient Longman, Madras	1986
3	Pathologic Basis of Disease	Cotran, Ramzi S	W. B. Saunders, Singapore	1999
4	Textbook of Pathology	Nagalotimath, S.J.	CBS, New Delhi	1998
5	Lecture note provided by Faculty of medical science, AKS University, Satna .			

Curriculum Development Team

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CO, POs and PSOs Mapping

Program title: B.P.T (Bachelor of physiotherapy)

Course code: 122BPT21

Course title: Pathology and Microbiology

	Program outcomes												Program specific outcome		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO2	PSO3
	Disciplinary knowledge	Psychomotor Skills	Communication skills	Critical thinking	Problem Solving	Analytical reasoning	Research – Related Skills	Co-operation /Team Work	Socio-cultural and multicultural competency	Awareness of moral, ethical and legal issues	Leadership qualities	Ongoing Learning:	Ability to Patient professional care .	Ability to Demonstrate clinical decision and patient care	Ability to counsel the patients, family, colleagues and students aspects of physiotherapy treatment.
introduce character of concept of injury, necrosis repair.	1	1	2	2	3	2	3	2	2	1	3	2	2	3	3
concepts description, blood, respiratory, cardiovascular	1	1	2	2	1	2	3	2	1	1	2	2	2	2	2
concepts alimentary and PNS system, salivary	2	2	1	1	2	2	2	1	2	1	2	1	1	2	2
concepts biology	3	2	2	2	3	2	3	2	2	1	2	3	1	3	3
idea of	.	.	.	1	1	3	3	3	1	1	2	2	1	3	1

Legends: 1- Low, 2- Medium, 3- High

Course Curriculum Map:

COs No.& Titles	SOs No.	Laboratory Instruction (LI)	Classroom Instruction(CI)	Self Learning
CO-1: the character of general pathology, concept of diseases, cell injury, degeneration, necrosis inflammation and repair, degeneration, vitamin	SO1.1 SO1.2 SO1.3 SO1.4 SO1.5		Unit-1.0 Introduction of Organization and corporate strategy 1,2,3,4,5,6,7,8,9,10,11,12,13,14,16,17	1

CO 2 the brief description of vascular disturbance, blood disorder, neoplasia, respiratory disease and cardiovascular system.	SO2.1 SO2.2 SO2.3 SO2.4 SO2.5		Unit-2 vascular disturbance, blood disorder, neoplasia, respiratory disease and cardiovascular system 1,2,3,4,5,6,7,8,9,10,11,12,13,14,16,17	1
CO3 : Illustrate the alimentary system, CNS and PNS musculoskeletal system, muscle, urinary system, prostate, endocrine, salivary gland	SO3.1 SO3.2 SO3.3 SO3.4 SO3.5		Unit-3 : alimentary system, CNS and PNS musculoskeletal system, muscle, urinary system, prostate, endocrine, salivary gland 1,2,3,4,5,6,7,8,9,10,11,12,13,14,16,17	1
CO 4: Analyze the general microbiology.	SO4.1 SO4.2 SO4.3 SO4.4 SO4.5		Unit-4: the general microbiology 1,2,3,4,5,6,7,8,9,10,11,12,13,14,16,17,18,19	1
CO 5: Evaluate the systemic microbiology	SO5.1 SO5.2 SO5.3 SO5.4 SO5.5		Unit 5: systemic microbiology. 1,2,3,4,5,6,7,8,9,10,11,12,13,14,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30	4

YEAR II

Course Code: 122BPT22

Course Title: Biochemistry and Pharmacology

Pre-requisite: Student should have basic knowledge of drugs, biomolecular, and biological systems

Rationale: The students studying principles and practice of the chemical processes that occur within living organisms, Developing knowledge of biomolecules, metabolic pathways, and cellular processes, Appreciating the principles of enzymology, protein structure, and function. 1. The effects of drugs on living organisms, Developing knowledge of drug mechanisms, pharmacokinetics, and pharmacodynamics, Appreciating the principles of drug design, development, and toxicity, Enhancing understanding of drug interactions, side effects, and adverse reactions

Course Outcomes:

Course Code:	122BPT22
Course Title:	Biochemistry and Pharmacology
Course Outcomes:	

122BPT22.1	Find how to extend the basic concepts of the basic biophysics and general biochemistry
122BPT22.2	Apply concepts the biomedical functions, bioenergetics
122BPT22.3	Learn the basic concepts of general metabolism, water and electrolyte balance
122BPT22.4	Recall the basic concepts of the general pharmacology alcohols, analgesics , antipyretics, sedatives, stimulants, drugs acting on muscles , anti-parkinsonism agent, drugs modifying b.p , hypolipidemia, anticoagulant, thyroxin , anti thyroid drugs
122BPT22.5	Relate the basic idea of the types of general pharmacology of anti- diabetics, glucocorticoids, calcium, phosphorus, calcitonin and parathormone, antibiotics, anti-cancer drugs,drugs acting on respiratory systems, vitamins, ovarian hormones, locally acting drugs

Scheme of Studies

CODE	Course Code	Course Title	Scheme of studies (Hours/Week)				Total Study Hours (CI+LI+SW+SL)
			CI	LI	SW	SL	
PCC	122BPT22	Biochemistry and Pharmacology	6	0	1	1	8

- Legend:**
- CI:** Classroom Instruction (Includes different instructional strategies i.e. Lecture (L) and Tutorial (T) and others),
 - LI:** Laboratory Instruction (Includes Practical performances in laboratory workshop, field or other locations using different instructional strategies)
 - SW:** Sessional Work (includes assignment, seminar, mini project etc.),
 - SL:** Self Learning,

Note: SW & SL has to be planned and performed under the continuous guidance and feedback of teacher to ensure outcome of Learning.

Scheme of Examination

Theory

CODE	Course Code	Course Title	Internal Assessment		University Examination			Total
			Theory	Practical	Theory	Viva	Practical	
PCC	122BP T22	Biochemistry and Pharmacology	20	--	80	--	--	100

Course-CurriculumDetailing:

This course syllabus illustrates the expected learning achievements, both at the course and session levels, which students are anticipated to accomplish through various modes of instruction including Classroom Instruction (CI), Laboratory Instruction (LI), Sessional Work (SW), and Self Learning (SL). As the course progresses, students should showcase their mastery of Session Outcomes (SOs), culminating in the overall achievement of Course Outcomes (COs) upon the course's conclusion.

122BPT22.1: Find how to extend the basic concepts of the basic biophysics and general biochemistry

Item	Hrs
CI	30
LI	00
SW	03
SL	02
Total	35

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO1.1 To Understand Basic Biophysics and General Biochemistry</p> <p>SO1.2 To learn about Concept of Acid base, Radio-isotopes, Nutrition, Carbohydrates</p> <p>SO1.3 To learn about Nutrition, Carbohydrates</p> <p>SO1.4 Application of Lipids</p> <p>SO1.5 Analysis of Proteins</p>		<p>Unit-1 Basic Biophysics and General Biochemistry</p> <p>1.1 Concept of Acid base</p> <p>1.2 buffer,</p> <p>1.3 Henderson- Hasselbach equation,</p> <p>1.4 brief knowledge of biophysical process such as Osmosis.</p> <p>1.5 Viscosity</p> <p>1.6 Surface tension</p> <p>1.7 Dialysis with special emphasis on their biomedical implication.</p> <p>1.8 A brief study of Radio-isotopes</p> <p>1.9 Radio-isotopes clinical applications</p> <p>1.10 Nutrition: Basic principles of nutrition; Carbohydrates</p> <p>1.11 Proteins</p> <p>1.12 Lipid caloric requirement</p> <p>1.13 balance diet.</p> <p>1.14 Carbohydrates</p> <p>1.15 Definition, classification with examples and general functions. Metabolism - Glycolysis,</p> <p>1.16 T.C.A Glycogen metabolism</p> <p>1.17 Blood Sugar regulation</p> <p>1.18 Diabetes</p> <p>1.19 diabetic keto-acidosis</p> <p>1.20 Lipids: Definition</p> <p>1.21 Classifications of Lipids</p> <p>1.22 Classifications of Lipids</p> <p>1.23 general functions. Essential fatty acids</p> <p>1.24 Cholesterol</p> <p>1.25 Blood lipids.</p> <p>1.26 Brief review of lipoproteins.</p> <p>1.27 Metabolism-Oxidation of fatty acids,</p> <p>1.28 cholesterol synthesis,</p> <p>1.29 fatty liver.</p> <p>1.30 Proteins: Definition, classification, and Bio-medical Importance</p>	<p>1. Nutrition: Basic principles of nutrition; Carbohydrates, Proteins and Lipid caloric requirement and balance diet</p> <p>2. Carbohydrates: Definition, classification with examples and general functions. Metabolism – Glycolysis.</p>

SW-1 Suggested Sectional Work (SW):

Assignments:

Concept of Acid base, buffer, Henderson- Hasselbach equation,

Mini Project:

Carbohydrates: Definition, classification with examples and general functions.

Metabolism - Glycolysis, Other Activities (Specify)

Proteins: Definition, classification

**122BPT22.2: Apply concepts the biomedical functions, bioenergetics
Hours**

Item	Hrs
C1	20
LI	00
SW	03
SL	02
Total	25

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO2.1 To Understand Biomedical functions, Bioenergetics</p> <p>SO2.2 To learn about hemoglobin and immunoglobulins, Plasma Proteins and functions</p> <p>SO2.3 To learn about Nucleic Acids, Tissue chemistry</p> <p>SO2.4 Application of Enzymes, Vitamins</p> <p>SO2.5 Analysis of Study of Plasma Membrane</p>		<p>Unit-2 Biomedical functions, Bioenergetics</p> <p>2.1 Study of hemoglobin</p> <p>2.2 immunoglobulins with functions.</p> <p>2.3 Plasma Proteins functions.</p> <p>2.4 Metabolism: General reactions of amino acids.</p> <p>2.5 Formation and fate of ammonia - Urea cycle.</p> <p>2.6 Nucleic Acids: Brief overview of the structure of RNA</p> <p>2.7 Brief overview of the structure of DNA .</p> <p>2.8 Nucleosides and Nucleotides. Study of few biologically important nucleotides.</p> <p>2.9 Tissue chemistry: bone and teeth. Composition function and chemical mediators of nerve structure of muscle tissue.</p> <p>2.10 General Biochemistry of muscle contraction and relaxation</p> <p>2.11 Chemistry of connective tissue,.</p> <p>2.12 Enzymes: Definition,</p> <p>2.13 Enzymes classification with examples. Factors affecting enzyme action.</p> <p>2.14 Brief study of enzyme inhibition. Clinical importance of enzymes.</p> <p>2.15 Vitamins: Definition, classification and functions.</p> <p>2.16 Vitamins Dietary source, Daily requirement and deficiency disorders</p> <p>2.17 Study of Plasma Membrane</p> <p>2.18 Review of laws of thermodynamics as applicable to biological systems.</p> <p>2.19 Concept of free energy charge. High-energy compounds</p> <p>2.20 Respiratory chain</p>	<p>1. Plasma Proteins and functions. Metabolism</p> <p>2. Nucleic Acids</p>

SW-1 Suggested Sectional

Work(SW): Assignments:

Tissue chemistry: Chemistry of connective tissue, bone and teeth.

Mini Project:

Study of Plasma Membrane, Review of laws of thermodynamics.

Other Activities (Specify):

Vitami

122BPT22.3: Learn the basic concepts of general metabolism, water and electrolyte balance hours

Item	Hrs
CI	15
LI	00
SW	03
SL	02
Total	20

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO3.1 To Understand Principles of General Metabolism, Water and Electrolyte Balance</p> <p>SO3.2 To learn about Carbohydrate metabolism</p> <p>SO3.3 To learn about Lipids Metabolism</p> <p>SO3.4 Application of Protein Metabolism</p> <p>SO3.5 Analysis of Purine and Pyrimidine, water and electrolyte content and balance, Dehydration</p>		<p>Unit-3 General Metabolism, Water and Electrolyte Balance</p> <p>3.1 Carbohydrate metabolism:</p> <p>3.2 Glycolysis,</p> <p>3.3 TCA</p> <p>3.4 Glycogen metabolism,</p> <p>3.5 blood sugar regulation</p> <p>3.6 Diabetes</p> <p>3.7 Diabetic Ketoacidosis.</p> <p>3.8 Lipids Metabolism:</p> <p>3.9 Beta-oxidation of Fatty acids</p> <p>3.10 Fatty acid synthesis</p> <p>3.11 cholesterol synthesis, Ketosis and Fatty liver.</p> <p>3.12 Protein Metabolism: General reaction of Amino acids</p> <p>3.13 Formation and fate of Ammonia, Urea cycle.</p> <p>3.14 Purine and Pyrimidine: Only catabolism of Purine to be Stressed in detail with special emphasis on Gout. General breakdown of Pyrimidine and associated disorders</p> <p>3.15 General outline of fluid compartments of the body with their water and electrolyte content and balance, Dehydration</p>	<p>1. Carbohydrate metabolism</p> <p>2. Protein Metabolism</p>

SW-1 Suggested Sectional Work (SW):
Assignments:

Lipids Metabolism: Beta-oxidation of Fatty acids, Fatty acid synthesis, cholesterol synthesis, Ketosis and Fatty liver

Mini Project:

Purine and Pyrimidine.

Other Activities (Specify):

water and electrolyte content and balance, Dehydration

122BPT22.4: Recall the basic concepts of the general pharmacology alcohols, analgesics, antipyretics, sedatives, stimulants, drugs acting on muscles, anti-parkinsonism agent, drugs modifying b.p , hypolipidemia, anticoagulant, thyroxin , anti thyroid drugs

Hours

Item	Hrs
CI	15
LI	00
SW	03
SL	02
Total	25

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO4.1 To Understand Principles of neurosurgery</p> <p>SO4.2 To learn about Congenital and Childhood disorders</p> <p>SO4.3 To learn about Trauma, Intra- cranial disorders</p> <p>SO4.4 Application of Head Injury: Etiology, pathophysiology, classification, clinical sign and symptoms, investigations, medical management, Surgical management and complications</p> <p>SO4.5 Analysis of Brain tumors and Spinal tumors</p>		<p align="center">Unit-4 General Pharmacology</p> <p>4.1 Definition of drug</p> <p>4.2 Pharmacokinetics</p> <p>4.3 Pharmacodynamics.</p> <p>4.4 Broad categories of adverse drug reactions.</p> <p>4.5 Alcohols</p> <p>4.6 Analgesics and Antipyretics, anti-inflammatory drugs.</p> <p>4.7 Sedatives.</p> <p>4.8 Stimulants.</p> <p>4.9 Drugs acting on muscles- Muscle relaxants</p> <p>4.10 Muscle stimulants.</p> <p>4.11 Anti-parkinsonism agents</p> <p>4.12 Drugs modifying B.P.</p> <p>4.13 Hypolipidemia.</p> <p>4.14 Anticoagulants.</p> <p>4.15 Thyroxin and Anti thyroid drugs.</p>	<p>1. Broad categories of adverse drug reactions.</p> <p>2. Sedatives.</p>

SW-1 Suggested Sectional Work (SW): Assignments:

Anticoagulants.

Mini

Project:

Alcohol

s.

Other Activities

(Specify):

Drugs

modifying B.P.

122BPT22.5: Relate the basic idea of the types of general pharmacology of anti- diabetics, glucocorticoids, calcium, phosphorus, calcitonin and parathormone, antibiotics, anti-cancer drugs, drugs acting on respiratory systems, vitamins, ovarian hormones, locally acting drugs

Hours

Item	Hrs
CI	20
LI	05
SW	03
SL	02
Total	30

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO5.1 To Understand Principles General Pharmacology Anti-diabetics.</p> <p>SO5.2 To learn about Glucocorticoids. Calcium, Phosphorus, Calcitonin and Parathormone</p> <p>SO5.3 To learn about Narrow spectrum antibiotics. Broad-spectrum antibiotics, Anti-cancer drugs</p> <p>SO5.4 Application of Drugs acting on respiratory systems, Vitamins</p> <p>SO5.5 Analysis of Ovarian hormones, Locally acting drugs</p>		<p>Unit-5 General Pharmacology</p> <p>5.1 Anti-diabetics.</p> <p>5.2 Glucocorticoids.</p> <p>5.3 Calcium, Phosphorus, Calcitonin and Parathormone.</p> <p>5.4 Narrow spectrum antibiotics.</p> <p>5.5. Broad-spectrum antibiotics.</p> <p>5.6 Anti-cancer drugs.</p> <p>5.7 Drugs acting on respiratory systems: Respiratory stimulants and respiratory depressants</p> <p>5.8 Bronchodilators, Expectorants.</p> <p>5.9 Anti-Asthmatics, Anti- tussive.</p> <p>5.10 Vitamins.</p> <p>5.11 Ovarian hormones,</p> <p>5.12 Anabolic steroids</p> <p>5.13 Estrogen, Progesterone</p> <p>5.14 Androgen.</p> <p>5.15 Locally acting drugs: Antibodies</p> <p>5.16 Local anesthetic drugs</p> <p>5.17 Counter-irritants</p> <p>5.18 Rubefacient,</p> <p>5.19 Soothing agent,</p> <p>5.20 Anti-microbial</p>	<p>1. Calcium, Phosphorus, Calcitonin and Parathormone</p> <p>2. Narrow spectrum antibiotics</p>

SW-1 Suggested Sectional Work

(SW): Assignments:

Broad-spectrum antibiotics.

Mini Project:

Drugs acting on respiratory systems Other Activities
 (Specify):
 Ovarian hormones.

Brief of Hours suggested for the Course Outcome

Course Outcomes	Class Lecture (CI)	Sessional Work (SW)	Self-Learning (SI)	Total hour (CI+SW+SI)
122BPT22.1: Define the basic biophysics and general biochemistry	30	3	2	35
122BPT22.2: Explain the biomedical functions, bioenergetics	20	3	2	25
122BPT22.3: Illustrate the general metabolism, water and electrolyte balance	15	3	2	20
122BPT22.4: Analyz the general pharmacology alcohols, analgesics , antipyretics, sedatives, stimulants, drugs acting on muscles , anti-parkinsonism agent, drugs modifying b.p , hypolipidemia, anticoagulant, thyroxin , anti thyroid drugs	15	3	2	20
122BPT22.5: Evaluate the types of general pharmacology of anti- diabetics,glucocorticoids, calcium, phosphorus, calcitonin and parathormone, antibiotics,.anti-cancer drugs,drugs acting on respiratory systems, vitamins, ovarian hormones, locally acting drugs	20	3	2	25
Total Hours	100	15	10	125

**Suggestion for End Semester Assessment
Suggested Specification Table (For ESA)**

CO	Unit Titles	Marks Distribution				Total Marks
		Ap	An	Ev	Cr	
CO-1	the basic biophysics and general biochemistry					
CO-2	the biomedical functions, bioenergetics					
CO-3	the general metabolism, water and electrolyte balance					
CO-4	the general pharmacology alcohols, analgesics , antipyretics, sedatives, stimulants, drugs acting on muscles , anti-parkinsonism agent, drugs modifying b.p , hypolipidemia, anticoagulant, thyroxin , anti thyroid drugs					
CO-5	the types of general pharmacology of anti- diabetics,glucocorticoids, calcium, phosphorus, calcitonin and parathormone, antibiotics,.anti-cancer drugs,drugs acting on respiratory systems, vitamins, ovarian hormones, locally acting drugs.					
Total						20

Legend: Ap: Apply, An: Analyze, Ev: Evaluate Cr: Create

Note. Detailed Assessment rubric need to be prepared by the course wise teachers for above tasks. Teachers can also design different tasks as per requirement, for end semester assessment.

Suggested Instructional/Implementation Strategies:

1. Improved Lecture
2. Tutorial
3. Case Method
4. Group Discussion
5. Role Play
6. Visit to hospitals
7. Demonstration

Suggested Learning Resources:

(a) Books:

S. No.	Title	Author	Publisher	Edition & Year
1	Textbook of Biochemistry	West and Todd Bhattacharya	Elsevier (formerly known as CBS Publishers and Distributors)	2009
2	Textbook of Medical Biochemistry	Chatterjee and Shinde	Jaypee Brothers Medical Publishers (P) Ltd	2009
3	Essential of Medical Pharmacology	Tripathi, K.D	Jaypee Brothers Medical Publishers (P) Ltd.	First Edition
4	Textbook of Pharmacology	B.N. Ghose	New Central Book Agency (NCBA)	2006
5	Lecture note provided by Faculty of medical sciences, AKS University, Satna.			

Curriculum Development Team

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5. Dr. Poonam Singhariya, Assistant Professor, Department of paramedical science
6. Dr. R.M. Sharma, Professor, Department of paramedical science

CO, POs and PSOs Mapping
Program title: B.P.T (Bachelor of physiotherapy)
Course code: 122BPT22
Course title: Biochemistry and Pharmacology

Course outcomes	Program outcomes												Program specific outcome			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO2	PSO3	PSO4
	Disciplinary knowledge	Psychomotor Skills	Communication skills	Critical thinking	Problem Solving	Analytical reasoning	Research – Related Skills	Co-operation /Team Work	Socio-cultural and multicultural competency	Awareness of moral, ethical and legal issues	Leadership qualities	Ongoing Learning:	Ability to Patient professional care .	Ability to Demonstrate clinical decision and patient care	Ability to counsel the patients, family, colleagues and students aspects of physiotherapy treatment.	Ability to Work effectively in various professional collaborative places like hospital.
CO1: Find how to extend the basic concepts of the basic biophysics and general biochemistry	2	2	1	1	2	2	2	1	2	1	2	1	1	2	2	2
CO2: Apply concepts the biomedical functions, bioenergetics	2	2	1	1	2	2	2	1	2	1	2	1	1	2	2	2
CO3: Learn the basic concepts of general metabolism, water and electrolyte balance	2	2	1	1	2	2	2	1	2	1	2	1	1	2	2	2
CO4: Recall the basic concepts of the general pharmacology alcohols, analgesics, antipyretics, sedatives, stimulants, drugs acting on muscles, anti-parkinsonism agent, drugs modifying b.p,	3	2	2	2	3	2	3	2	2	1	2	3	1	3	3	2
CO5: Relate the basic idea of the types of general pharmacology of anti- diabetics, glucocorticoids, calcium, phosphorus, calcitonin and parathormone, antibiotics, anti-cancer drugs, drugs acting on respiratory systems, vitamins,	3	2	2	2	3	2	3	2	2	1	2	3	1	3	3	2

Legends: 1- Low, 2- Medium, 3- High

Course Curriculum Map:

POs & PSOs No.	COs No.& Titles	SOs No.	Laboratory Instruction (LI)	Classroom Instruction(CI)	Self Learning (SL)
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO-1: Define the basic biophysics and general biochemistry	SO1.1 SO1.2 SO1.3 SO1.4 SO1.5		Unit-1.0 the basic biophysics and general biochemistry 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30	2
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO 2 : : Explain the biomedical functions, bioenergetics.	SO2.1 SO2.2 SO2.3 SO2.4 SO2.5		Unit-2 the biomedical functions, bioenergetics 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,	2
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO3 : Illustrate the general metabolism, water and electrolyte balance	SO3.1 SO3.2 SO3.3 SO3.4 SO3.5		Unit-3 : the general metabolism, water and electrolyte balance 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15	2
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO 4: Analyz the general pharmacology alcohols, analgesics , antipyretics, sedatives, stimulants, drugs acting on muscles , anti-parkinsonism agent, drugs modifying b.p , hypolipidemia, anticoagulant, thyroxin , anti thyroid drugs.	SO4.1 SO4.2 SO4.3 SO4.4 SO4.5		Unit-4: the general pharmacology alcohols, analgesics , antipyretics, sedatives, stimulants, drugs acting on muscles , anti-parkinsonism agent, drugs modifying b.p , hypolipidemia, anticoagulant, thyroxin , anti thyroid drugs .1,2,3,4,5,6,7,8,9,10,11,12,13,14,15	2
PO: 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO 5: Evaluate the types of general pharmacology of anti-diabetics,glucocorticoids, calcium, phosphorus, calcitonin and parathormone, antibiotics,.anti-cancer drugs,drugs acting on respiratory systems, vitamins, ovarian hormones, locally acting drugs	SO5.1 SO5.2 SO5.3 SO5.4 SO5.5		Unit 5: the types of general pharmacology of anti-diabetics,glucocorticoids, calcium, phosphorus, calcitonin and parathormone, antibiotics,.anti-cancer drugs. 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20	2

YEAR 11

Course Code: 122BPT23

Course Title: Medicine Including Pediatrics and Geriatrics

Pre- requisite: Student should have basic knowledge of pathological and general conditions of pediatric and geriatric medicine.

Rationale: The students studying principles and practice of Diagnosing and managing diseases and disorders, , Enhancing understanding of epidemiology and public health 1. child development and growth, Managing congenital and acquired disorders in children, Preventing and treating infectious diseases in children 1. aging and age-related changes, Managing chronic diseases and disabilities in older adults, Preventing and treating geriatric syndromes

Course Outcomes:

Course Code:	122BPT23
Course Title:	Medicine including Gediatics and Geriatrics
Course Outcomes:	
122BPT23.1	Find how to extend the introduction o f infections, diseases of blood diseases of liver GIT diseases
122BPT23.2	Apply concepts the renal disease, nutritional and metabolic disease, disease of bones and joints.
122BPT23.3	Learn the basic concepts of the common dermatological, geriatrics disease and radiological examination
122BPT23.4	Recall the basic concepts of bone and joints
122BPT23.5	Relate the basic idea of regarding paediatrics condition

Scheme of Studies

CODE	Course Code	Course Title	Scheme of studies (Hours/Week)				Total Study Hours (CI+LI+SW+SL)
			CI	LI	SW	SL	
PCC	122BPT23	Medicine including pediatrics and geriatrics	6	0	1	1	8

Legend: **CI:** Classroom Instruction (Includes different instructional strategies i.e. Lecture (L) and Tutorial (T) and others),
LI: Laboratory Instruction (Includes Practical performances in laboratory workshop, field or other locations using different instructional strategies)
SW: Sessional Work (includes assignment, seminar, mini project etc.),
SL: Self Learning,

Note: SW & SL has to be planned and performed under the continuous guidance and feedback of teacher to ensure outcome of Learning.

Scheme of Examination

Theory

CODE	Course Code	Course Title	Internal Assessment		University Examination			Total
			Theory	Practical	Theory	Viva	Practical	
PCC	122BPT 23	Medicine including pediatrics and geriatrics	20	--	80	---	---	100

Course-CurriculumDetailing:

This course syllabus illustrates the expected learning achievements, both at the course and session levels, which students are anticipated to accomplish through various modes of instruction including Classroom Instruction (CI), Laboratory Instruction (LI), Sessional Work (SW), and Self Learning (SL). As the course progresses, students should showcase their mastery of Session Outcomes (SOs), culminating in the overall achievement of Course Outcomes (COs) upon the course's conclusion.

122BPT23.1: Find how to extend the introduction of infections, diseases of blood diseases of liver GIT diseases

Item	Hrs
CI	25
LI	00
SW	05
SL	03
Total	39

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO1.1 To Understand infectious disease</p> <p>SO1.2 To learn about Diseases of blood</p> <p>SO1.3 To learn about Diseases of Liver</p> <p>SO1.4 Application of GIT Diseases</p>		<p>Unit-1 Introduction of Infections, Diseases Of Blood Diseases Of Liver GIT Diseases</p> <p>1.1 Infections Outline briefly the Etiology, symptoms and brief management of the following disease. Bacterial – Tetanus</p> <p>1.2 , Typhoid.</p> <p>1.3 Viral – Herpes simplex,</p> <p>1.4 Herpes Zoster,</p> <p>1.5 Measles,</p> <p>1.6 Hepatitis –B.</p> <p>1.7 HIV.</p> <p>1.8 Protozal – Filariasis,</p> <p>1.9 Malaria,</p> <p>1.10 Amoebiasis.</p> <p>1.11 Diseases of blood. Define and describe clinical aspects of Nutritional Anaemias.</p> <p>1.12 Diseases of blood. Define and describe clinical aspects of Nutritional Anaemias.</p> <p>1.13 Diseases of blood. Define and describe clinical aspects of Nutritional Anaemias.</p> <p>1.14 Brief description of Bleeding Disorder with emphasis to Haemophilia.</p> <p>1.15 Lymphadenopathy and</p>	<p>1. Bacterial – Tetanus, Typhoid.</p> <p>Viral – Herpes simplex</p> <p>2., Herpes Zoster, Measles,.</p> <p>3. Clinical examination</p> <p>Nutritional Anaemias</p>

		1.16 Splenomegaly. 1.17 Leukaemia – acute 1.18 Leukaemia chronic. 1.19 Diseases of Liver Jaundice 1.20 Viral Hepatitis. 1.21 Cirrhosis of Liver 1.22 GIT Diseases 1.23 Peptic Ulcer 1.24 Diarrhea 1.25 Dysentery.	
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SW-1 Suggested Sectional Work

(SW): Assignments:

Cirrhosis of Liver

Mini Project:

1. Peptic Ulcer

Other Activities (Specify):.

2. Diarrhea and Dysentery

122BPT23.2: Apply concepts the renal disease, nutritional and metabolic disease, disease of bones and joints

Item	Hrs
CI	25
LI	00
SW	05
SL	03
Total	39

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO2.1 To Understand Principles Developmental disorders</p> <p>SO2.2 To learn about Early detection of brain damaged</p> <p>SO2.3 To learn about Principles of examination of higher function and applicability in training.</p> <p>SO2.4 Application of Physiotherapy evaluation of a neurological patient</p>		<p>Unit-2 RENAL DISEASE, NUTRITIONAL AND METABOLIC DISEASE, DISEASE OF BONES AND JOINTS</p> <p>2.1 Renal Diseases</p> <p>2.2 Brief description of acute renal Failure.</p> <p>2.3 Chronic renal Failure</p> <p>2.4 Urinary Tract Infection.</p> <p>2.5 Acute Nephritis,</p> <p>2.6 Nephrotic Syndrome.</p> <p>2.7 Nutritional Disease</p> <p>2.8 Metabolic Disease.</p> <p>2.9 Balanced normal diet.</p> <p>2.10 Protein Calorie Malnutrition</p> <p>2.11 Avitaminosis of both water and fat-soluble vitamins.</p> <p>2.12 Diabetes mellitus – Definition, Classification and complications, brief description of management of diabetes mellitus.</p> <p>2.13 Obesity – Etiology and management.</p> <p>2.14 Hyper and Hypo-thyroidism.</p> <p>2.15 Calcium Homeostasis.</p> <p>2.16 Gigantism and Acromegaly</p> <p>2.17 Diseases of Bones, Joints and Connective tissue</p> <p>2.18 Brief introduction to understanding of Auto immune diseases.</p> <p>2.19 Rheumatic fever and Rheumatoid arthritis – Aetio pathogenesis, Clinical features, complications, diagnosis and briefly outline the management.</p> <p>2.20 Rheumatic fever and Rheumatoid arthritis – Aetio pathogenesis, Clinical features, complications, diagnosis and briefly outline the management</p> <p>2.21 Rheumatic fever and Rheumatoid arthritis – Aetio pathogenesis, Clinical features, complications, diagnosis and briefly outline the management</p> <p>2.22 Brief description of Systemic Lupus Erythematosus.</p> <p>2.23 Polyarteritis Nodosa, Dermatomyositis, Scleroderma.</p>	<p>1. Balanced normal diet</p> <p>2. Diabetes mellitus</p> <p>3. Osteoarthritis</p>

		<p>2.24Osteoarthritis – Aetiopathogenesis, clinical feature, diagnosis, complication and management</p> <p>2.25Osteoarthritis – Aetiopathogenesis, clinical feature, diagnosis, complication and management</p> <p>..</p>	
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SW-1 Suggested Sectional Work

(SW): Assignments:

Urinary Tract Infection.

Mini Project:

Diseases of Bones, Joints and Connective tissue.

OtherActivities (Specify)

Common inherited disorders.

122BPT23.3: Learn the basic concepts of the common dermatological, geriatrics disease and radiological examination

Item	Hrs
CI	25
LI	00
SW	05
SL	03
Total	39

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO3.1 To Understand Genetics and Diseases</p> <p>SO3.2 To learn about Allergy Drug reactions</p> <p>SO3.3 To learn about dermatological condition</p>		<p>Unit-3 COMMON GENETIC, MISCELLANEOUS DERMATOLOGICAL DISORDER</p> <p>3.1 Genetics</p> <p>3.2 Genetics</p> <p>3.3 Genetics</p> <p>3.4 Diseases</p> <p>3.5 Common inherited disorders</p> <p>3.6 Common inherited disorders</p> <p>3.7 Prevention of genetic disorders</p> <p>3.8 Miscellaneous</p> <p>3.9 Allergy</p> <p>3.10 Allergy</p> <p>3.11 Allergy</p> <p>3.12 Drug reactions</p> <p>3.13 Dermatology</p> <p>3.14 Dermatology</p> <p>3.15 Dermatology</p> <p>3.16 Common skin infections.</p> <p>3.17 Psoriasis</p> <p>3.18 Psoriasis</p> <p>3.19 Psoriasis</p> <p>3.20 Leprosy- aetio pthogenesis,</p> <p>3.21 clinical features and</p> <p>3.22 treatment.</p> <p>3.23 Venereal diseases – Syphilis,</p> <p>3.24 HIV</p> <p>3.25 HIV</p>	<p>1.Leprosy-</p> <p>2.Syphilis, HIV</p>

SW-1 Suggested Sectional Work

(SW): Assignments:

Common skin infections.

Mini Project:

Venereal diseases

– Syphilis, Other

Activities

(Specify):HIV

122BPT23.4: Recall the basic concepts of bone and joints

Item	Hrs
C1	25
LI	00
SW	05
SL	03
Total	39

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO4.1 To understand geriatrics conditions</p> <p>SO4.2 To learn about Implications of aging in physical therapy. lung disease</p> <p>SO4.3 To learn about Assessment Radiology of Bone and joints</p> <p>SO4.4 Application of Radiology of chest including Heart</p>		<p>UNIT-4 GERIATRICS CONDITIONS AND RADIOLOGY OF BONE AND JOINTS</p> <p>3.1 Geriatrics</p> <p>3.2 Geriatrics</p> <p>3.3 Physiology of ageing,</p> <p>3.4 Physiology of ageing</p> <p>3.5 Manifestations of diseases in old people</p> <p>3.6 Manifestations of diseases in old people</p> <p>3.7 General Principles Of Management.</p> <p>3.8 General Principles Of Management</p> <p>3.9 Common Geriatric Disorders and their management,</p> <p>3.10 Common Geriatric Disorders and their management</p> <p>3.11 Implications of aging in physical therapy</p> <p>3.12 Implications of aging in physical therapy.</p> <p>3.13 Lung Disease,</p> <p>3.14 Lung Disease</p> <p>3.15 Pleurisy</p> <p>3.16 Pleurisy</p> <p>3.17 Pulmonary embolism</p> <p>3.18 Pulmonary embolism</p> <p>3.19 Pulmonary embolism</p> <p>3.20 Radiology (Both in normal and Pathological conditions).</p> <p>3.21 Radiology of Bone and joints.</p> <p>3.22 Radiology of Bone and joints</p> <p>3.23 Radiology of chest including Heart.</p> <p>3.24 Radiology of chest including Heart</p> <p>3.25 Radiology of chest including Heart</p>	<p>1. Pulmonary embolism</p> <p>.</p> <p>2. Radiological assessment of bony landmarks</p>

SW-1 Suggested Sectional Work

(SW): Assignments:

physiology of ageing

Mini Project:

Lung disease.

Other Activities

(Specify):.

Radiological

assessment

122BPT23.5: Relate the basic idea of regarding paediatrics condition

Hours

Item	Hrs
CI	30
LI	00
SW	05
SL	03
Total	39

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO5.1 To Understand Normal Growth and development of child</p> <p>SO5.2 To learn about Immunization programmes</p> <p>SO5.3 Application of Child and nutrition</p> <p>SO5.4 Application of Clinical presentation, management Cerebral palsy, Poliomyelitis, Muscular dystrophy</p> <p>SO5.5 Application of Childhood rheumatism</p> <p>SO5.6 Application of Acute CNS infections</p>		<p>UNIT-5 PAEDIATRICS CONDITION</p> <p>5.1 Normal Growth and development of child – motor, mental, language and social from birth to 12 years including physical, social, adaptive development.</p> <p>5.2. Pathological presentations of growth and development disorders</p> <p>5.3. Common infectious diseases in children: Brief description of following infectious diseases along with outline of management: Tetanus,</p> <p>5.4. diphtheria,</p> <p>5.5. Mycobacterial,</p> <p>5.6. measles,</p> <p>5.7. chicken pox,</p> <p>5.8. gastroenteritis,</p> <p>5.9. HIV,</p> <p>5.10. Malaria</p> <p>5.11. Immunization programmes – WHO schedule, different vaccinations, rationale; special consideration to various disease eradication programmes like Pulse-Polio</p> <p>5.12. Child and nutrition - Nutritional requirements, malnutrition syndrome, Vitamins (A, B, C, D & K) and</p> <p>5.13. Minerals (iron, calcium phosphorus, iodine) deficiencies in children and management in brief</p> <p>5.14. Clinical presentation, management & prevention of the following: - Cerebral palsy,</p> <p>5.15. Poliomyelitis,</p> <p>5.16. Muscular dystrophy</p> <p>5.17. Childhood rheumatism-types, clinical presentation,</p> <p>5.18. management in brief Acute CNS infections: clinical presentation, complications</p> <p>5.19. management of bacterial and tubercular infections in brief Clinical presentation, management & prevention of the following</p>	<p>1. Cerebral palsy</p> <p>2. Poliomyelitis</p> <p>3. Muscular dystrophy</p>

		respiratory conditions: URI, 5.20. LRI, 5.21. bronchiolitis, 5.22. bronchiolitis 5.23. asthma, 5.24. TB (in brief) 5.25. Clinical presentation, management & prevention of the following cardiac conditions: Rheumatic heart disease, 5.26. S.A.B.E., 5.27. Congenital heart disease - ASD, 5.28. VSD, 5.29. PDA 5.30. PDA	
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SW-1 Suggested Sectional Work

(SW): Assignments:

Tetanus, diphtheria, Mycobacterial, measles.

Mini Project:

Pulse-Polio

programmes

Other Activities

(Specify): ASD,

VSD, PDA.

Brief of Hours suggested for the Course Outcome

Course Outcomes	Class Lecture (CI)	Sessional Work (SW)	Self-Learning (SI)	Total hour (CI+SW+SI)
122BPT23.1: Define the introduction of infections, diseases of blood diseases of liver GIT diseases	25	5	3	33
122BPT23.2: Explain the renal disease, nutritional and metabolic disease, disease of bones and joints	25	5	3	33
122BPT23.3: Illustrate the basic concepts of the common dermatological, geriatrics disease and radiological examination	25	5	3	33
122BPT23.4: Analyze the basic concepts of bone and joints	25	5	3	33
122BPT235: Evaluate the basic idea of regarding paediatrics condition	30	5	3	38
Total Hours	130	25	15	170

**Suggestion for End Semester Assessment
Suggested Specification Table (For ESA)**

CO	Unit Titles	Marks Distribution				Total Marks
		Ap	An	Ev	Cr	
CO-1	the introduction of infections, diseases of blood diseases of liver GIT diseases					
CO-2	the renal disease, nutritional and metabolic disease, disease of bones and joints					
CO-3	the basic concepts of the common dermatological, geriatrics disease and radiological examination					
CO-4	the basic concepts of bone and joints					
CO-5	the basic idea of regarding paediatrics condition					
Total						20

Legend: Ap: Apply, An: Analyze, Ev: Evaluate Cr: Create

Note. Detailed Assessment rubric need to be prepared by the course wise teachers for above tasks. Teachers can also design different tasks as per requirement, for end semester assessment.

Suggested Instructional/Implementation Strategies:

1. Improved Lecture
2. Tutorial
3. Case Method
4. Group Discussion
5. Role Play
6. Visit to hospitals
7. Demonstration

Suggested Learning Resources:

(a) Books:

S. No.	Title	Author	Publisher	Edition & Year
1	Principles and Practice of Medicine	Davidson	Churchill Livingstone	2009
2	Symptoms and signs in Clinical Medicine	Chemberlin, E.N.and Ogilvie, C. Jhon Wright	Cengage Learning,India	2009
3	Management Principles and Applications	Griffin	Cengage Learning,India	First Edition
4	Essentials of Management	Harold Koontz, O'Donnell and Heinz Wehrich	New Delhi, TMHi	2006
5	Lecture note provided by Faculty of medical sciences, AKS University, Satna .			

Curriculum Development Team

1. Professor (Dr.) GP Richariya, Dean, Faculty of Medical Science, AKS University
2. Dr. Deajeet dutta Principal Department of paramedical science AKS University ,
3. Dr Anil kumar mishra Head of the Department, Department of paramedical science
4. Dr. Brajesh kumar, Assistant Professor , Department of paramedical science
5. Dr. Poonam Singhariya, Assistant Professor , Department of paramedical science
6. Dr. R.M. Sharma , Professor , Department of paramedical science

CO, POs and PSOs Mapping
Program title: B.P.T (Bachelor of physiotherapy)
Course code122BPT23
Course title: Medicine including pediatrics & geriatrics

Course outcomes	Program outcomes												Program specific outcome			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO2	PSO3	PSO4
	Disciplinary knowledge	Psychomotor Skills	Communication skills	Critical thinking	Problem Solving	Analytical reasoning	Research – Related Skills	Co-operation /Team Work	Socio-cultural and multicultural competency	Awareness of moral, ethical and legal issues	Leadership qualities	Ongoing Learning:	Ability to Patient professional care .	Ability to Demonstrate clinical decision d patient care	Ability to counsel the patients, family,colleagues and students aspects of physiotherapy treatment.	Ability to Work effectively in various professional collaborative places like hospital.
CO1: Find how to extend the introduction of infections, diseases of blood diseases of liver GIT diseases	1	1	2	2	3	2	1	2	2	1	3	2	2	.	3	1
CO2: Apply concepts the renal disease, nutritional and metabolic disease, disease of bones and joints	1	1	2	2	1	2	.	2	1	1	2	2	2	.	2	1
CO3 Learn the basic concepts of the common dermatological , geriatrics disease and radiological examination	2	2	1	1	2	2	2	1	2	1	2	1	1	2	2	2
CO4 Recall the basic concepts of bone and joints	3	2	2	2	3	2	1	2	2	1	2	2	1	1	3	2
CO5: Relate the basic idea of regarding paediatrics condition	.	.	.	1	1	3	.	3	1	1	2	2	1	1	1	3

Legends: 1- Low, 2- Medium, 3- High

Course Curriculum Map:

POs & PSOs No.	COs No.& Titles	SOs No.	Laboratory Instruction (LI)	Classroom Instruction(CI)	Self Learning (SL)
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO-1: Define the introduction of infection, disease of blood, liver, git	SO1.1 SO1.2 SO1.3 SO1.4 SO1.5	00	Unit-1.0 the introduction of infection, disease of blood, liver, git 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25	03
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO 2 : Explain the overview the renal disease, nutritional and metabolic disease.	SO2.1 SO2.2 SO2.3 SO2.4 SO2.5	00	Unit-2 the renal disease, nutritional and metabolic disease 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25	03
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO3 : Illustrate the the common dermatological condition geriatrics disease	SO3.1 SO3.2 SO3.3 SO3.4 SO3.5	00	Unit-3 : the common dermatological condition geriatrics disease 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25	03
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO 4: Analyze the radiology of bones and joints.	SO4.1 SO4.2 SO4.3 SO4.4 SO4.5	00	Unit-4: the radiology of bones and joints 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25	03
PO: 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO 5: Evaluate the pediatrics condition	SO5.1 SO5.2 SO5.3 SO5.4 SO5.5	00	Unit 5: the pediatrics condition. 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,26,27,28,29,30	03

YEAR II

Course Code: 122BPT24

Course Title: General Surgery Obstetrics and Gynecology

Pre- requisite: Student should have basic knowledge of general surgery obstetrics and Gynecology and care of patients with related conditions

Rationale: The students studying principles and practice of the benefits of exercise on physical and mental health, Developing knowledge of exercise testing and assessment methods, Enhancing understanding of exercise physiology and biomechanics, evidence-based practice and research in exercise science.

Course Outcomes:

Course Code:	122BPT24
Course Title:	General Surgery Obstetrics and Gynecology
Course Outcomes:	
122BPT23.1	Find how to extend acquire knowledge regarding the introduction of general surgery
122BPT23.2	Apply concepts the regarding the abdominal surgery, burns, plastic surgery
122BPT23.3	Learn the basic concepts of the common ophthalmology and e.n.t. condition and its management
122BPT23.4	Recall the basic concepts of obstetrics conditions and management
122BPT23.5	Relate the basic idea of gynecology condition and management

Scheme of Studies

CODE	Course Code	Course Title	Scheme of studies (Hours/Week)				Total Study Hours (CI+LI+SW+SL)
			C I	LI	SW	SL	
PCC	122BPT24	General Surgery Obstetrics and Gynecology	6		1	1	8

Legend: **CI:** Classroom Instruction (Includes different instructional strategies i.e. Lecture (L) and Tutorial (T) and others),
LI: Laboratory Instruction (Includes Practical performances in laboratory workshop, field or other locations using different instructional strategies)
SW: Sessional Work (includes assignment, seminar, mini project etc.),
SL: Self Learning,

Note: SW & SL has to be planned and performed under the continuous guidance and feedback of teacher to ensure outcome of Learning.

Scheme of Examination

Theory

CODE	Course Code	Course Title	Internal Assessment		University Examination			Total
			Theory	Practical	Theory	Viva	Practical	
PCC	122BPT24	General surgery obstetrics and gynecology	20	--	80	--	--	100

Course-CurriculumDetailing:

This course syllabus illustrates the expected learning achievements, both at the course and session levels, which students are anticipated to accomplish through various modes of instruction including Classroom Instruction (CI), Laboratory Instruction (LI), Sessional Work (SW), and Self Learning (SL). As the course progresses, students should showcase their mastery of Session Outcomes (SOs), culminating in the overall achievement of Course Outcomes (COs) upon the course's conclusion.

122BPT24.1: Find how to extend acquire knowledge regarding the introduction of general surgery

Hours

Item	Hrs
CI	38
LI	00
SW	05
SL	03
Total	46

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO1.1 To Understand infectious disease</p> <p>SO1.2 To learn about wound, scar, ulcers, boils and carbuncles</p> <p>SO1.3 To learn about pre- and post –operative physical examination</p> <p>SO1.4 Application of postoperative complications</p>		<p>Unit-1 INTRODUCTION OF GENERAL SURGERY</p> <p>1.1 Introduction of genral surgery</p> <p>1.2 Introduction of genral surgery</p> <p>1.3 Introduction of genral surgery</p> <p>1.4 Introduction of genral surgery</p> <p>1.5 Description of events frequently accompanying general Anesthesia,</p> <p>1.6 Description of events frequently accompanying general Anesthesia</p> <p>1.7 Description of events frequently accompanying general Anesthesia</p> <p>1.8 Description of events frequently accompanying general Anesthesia</p> <p>1.9 Blood transfusion and physiological response of the body.</p> <p>1.10Blood transfusion and physiological response of the body</p> <p>1.11 Blood transfusion and physiological response of the body</p> <p>1.12Blood transfusion and physiological response of the body</p> <p>1.13Wounds</p>	<p>1. Blood transfusion</p> <p>2. Pre- and post – operative physical examination</p>

		<p>1.14 Wounds</p> <p>1.15 Wounds</p> <p>1.16 Scars</p> <p>1.17 Scars</p> <p>1.18 Scars</p> <p>1.19 Ulcers</p> <p>1.20 Ulcers</p> <p>1.21 Ulcers</p> <p>1.22 Boils</p> <p>1.23 Boils</p> <p>1.24 Boils</p> <p>1.25 Carbuncles</p> <p>1.26 Carbuncles</p> <p>1.27 Carbuncles</p> <p>1.28 Carbuncles</p> <p>1.29 Principles of pre- and post – operative physical examination, investigations,</p> <p>1.30 Principles of pre- and post – operative physical examination, investigations</p> <p>1.31 Principles of pre- and post – operative physical examination, investigations</p> <p>1.32 Principles of pre- and post – operative physical examination, investigations</p> <p>1.33 Principles of pre- and post – operative physical examination, investigations</p> <p>1.34 Postoperative complications and their management.</p> <p>1.35 Postoperative complications and their management</p> <p>1.36 Postoperative complications and their management</p> <p>1.37 Postoperative complications and</p>	
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		<p>their management</p> <p>1.38 Postoperative complications and their management</p>	
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SW-1 Suggested Sectional

Work (SW): Assignments:

Wounds, scars

Mini Project:

boils

Other Activities (Specify)

Post operative complication

122BPT24.2: Apply concepts the regarding the abdominal surgery, burns, plastic surgery,

Hours

Item	Hrs
CI	38
LI	00
SW	05
SL	03
Total	46

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO2.1 To Understand Principles of abdominal surgery</p> <p>SO2.2 To learn about Burns</p> <p>SO2.3 To learn about Principles Plastic Surgery</p>		<p>Unit-2 Abdominal surgery, Burns, Plastic Surgery</p> <p>2.1 Abdominal surgery: Incisions, complications and management of following:</p> <p>2.2 Nephrectomy,</p> <p>2.3 Nephrectomy</p> <p>2.4 Appendicectomy,</p> <p>2.5 Appendicectomy,</p> <p>2.6 Herniorrhaphy,</p> <p>2.7 Herniorrhaphy</p> <p>2.8 Mastectomy,</p> <p>2.9 Mastectomy,</p> <p>2.10 Thyroidectomy,</p> <p>2.11 Thyroidectomy</p> <p>2.12 Colostomy,</p> <p>2.13 Colostomy,</p> <p>2.14 Colostomy,</p>	<p>1. Mastectomy</p> <p>2. complications of burns</p> <p>3. Cineplasty</p>

		<p>2.15 Adrenalectomy, 2.16 Adrenalectomy, 2.17 Adrenalectomy, 2.18 Cystectomy, 2.19 Cystectomy, 2.20 Hysterectomy, 2.21 Hysterectomy, 2.22 Prostatectomy, 2.23 Cholecystectomy, 2.24 Ileostomy, 2.25 Incisional hernia and its prevention. 2.26 Burns: Causes, Classification, 2.27 Medical management 2.28 precautions in the acute stage 2.29 complications of burns and their management. 2.30 Plastic Surgery: a. Principles of plastic surgery 2.31 post – operative management and complications. 2.32 Cineplasty. 2.33 Principles of cosmetic surgery. 2.34 Skin grafting. 2.35 Surgery of Hand with emphasis on management of traumatic & leprosy hand. 2.36 Surgery of Hand with emphasis on management of traumatic & leprosy hand 2.37 Burns and plastic surgery management 2.38 Burns and plastic surgery management</p>	
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SW-1 Suggested Sectional Work (SW): Assignments:

Abdominal Incisions.

Mini Project:

Classification of burns .

Other Activities

(Specify):

Principles of cosmetic surgery.

122BPT24.3: Learn the basic concepts of the common ophthalmology and e.n.t. condition and its management

Hours

Item	Hrs
CI	38
LI	00
SW	05
SL	03
Total	46

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO3.1 To Understand Ophthalmology condition</p> <p>SO3.2 To learn about common condition like errors of refraction, squint, conjunctivitis, trachoma</p> <p>SO3.3 To learn about common condition corneal ulcers, iritis, cataract, retinitis, glaucoma</p> <p>SO3.4 Application of E.N.T. condition like sinusitis, rhinitis, otitis, otosclerosis, mastoidectomy, loss of hearing</p>		<p>Unit-3 Common Ophthalmology and E.N.T. Condition and its Management</p> <p>3.1 Ophthalmology: Etiology, symptomatology and treatment of visual defects emphasis on</p> <p>3.2 Errors of Refraction,</p> <p>3.3 Errors of Refraction</p> <p>3.4 Errors of Refraction</p> <p>3.5 Squint</p> <p>3.6 Squint</p> <p>3.7 Conjunctivitis,</p> <p>3.8 Conjunctivitis</p> <p>3.9 Trachoma,</p> <p>3.10 Trachoma</p> <p>3.11 Corneal ulcers,</p> <p>3.12 Corneal ulcers</p> <p>3.13 Iritis</p> <p>3.14 Iritis</p> <p>3.15 Cataract,</p> <p>3.16 Cataract,</p> <p>3.17 Retinitis</p> <p>3.18 Retinitis</p> <p>3.19 Detachment of retina</p> <p>3.20 Detachment of retina</p> <p>3.21 Glaucoma</p> <p>3.22 Glaucoma</p> <p>3.23 E.N.T.:Etiology,</p> <p>3.24 E.N.T.:Etiology</p> <p>3.25 symptomatology</p> <p>3.26 treatment of sinusitis,</p> <p>3.27 treatment of sinusitis</p> <p>3.28 treatment of sinusitis</p> <p>3.29 Rhinitis,</p> <p>3.30 Rhinitis,</p> <p>3.31 Acute and Chronic Otitis,</p> <p>3.32 Acute and Chronic Otitis</p> <p>3.33 Otosclerosis,</p> <p>3.34 Otosclerosis</p> <p>3.35 Mastoidectomy</p> <p>3.36 Mastoidectomy</p> <p>3.37 loss of hearing</p> <p>3.38 loss of hearing</p>	<p>1. Conjunctivitis</p> <p>2. Acute</p> <p>an</p> <p>d Chronic</p> <p>Otitis</p>

Assignments:

Cataract.

Mini Project:

Otosclerosis,

Other Activities (Specify)

loss of hearing

122BPT24.4: Recall the basic concepts of obstetrics conditions and management

Hours

Item	Hrs
CI	40
LI	00
SW	05
SL	03
Total	48

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO4.1 To understand Obstetrics conditions</p> <p>SO4.2 To learn about Antenatal care and diagnosis of pregnancy including high-risk pregnancy</p> <p>SO4.3 To learn about Labour, stage of labour, normal and abnormal labour, Delivery and management of neonate.</p> <p>SO4.4 Application of Pelvic pain and its management</p>		<p>UNIT-4 Obstetrics conditions and management</p> <p>4.1. Brief Anatomy and physiology of female reproductive system.</p> <p>4.2. Brief Anatomy and physiology of female reproductive system</p> <p>4.3. Brief Anatomy and physiology of female reproductive system</p> <p>4.4. Basic principles of clinical examination, investigation, diagnosis, Prognosis of female reproductive system disorders.</p> <p>4.5. Basic principles of clinical examination, investigation, diagnosis, Prognosis of female reproductive system disorders.</p> <p>4.6. Basic principles of clinical examination, investigation, diagnosis, Prognosis of female reproductive system disorders.</p> <p>4.7. Basic principles of clinical examination, investigation, diagnosis, Prognosis of female reproductive system disorders.</p> <p>4.8. Menstruation and its disorders.</p> <p>4.9. Menstruation and its disorders</p> <p>4.10. Menstruation and its disorders</p> <p>4.11. Physiological changes during pregnancy.</p> <p>4.12. Physiological changes during pregnancy</p> <p>4.13. Physiological changes during pregnancy</p> <p>4.14. Antenatal care and diagnosis of pregnancy</p> <p>4.15. Antenatal care and diagnosis of pregnancy</p> <p>4.16. Antenatal care and diagnosis of</p>	<p>1. Brief Anatomy and physiology of female reproductive system</p> <p>2. Menstruation and its disorders</p>

		<p>pregnancy</p> <p>4.17. high-risk pregnancy.</p> <p>4.18. high-risk pregnancy</p> <p>4.19. Labour,</p> <p>4.20. Labour</p> <p>4.21. stage of labour,</p> <p>4.22. stage of labour</p> <p>4.23. normal and abnormal labour,</p> <p>4.24. normal and abnormal labour</p> <p>4.25. Delivery</p> <p>4.26. Delivery</p> <p>4.27. Management Of Neonate.</p> <p>4.28. Management Of Neonate</p> <p>4.29. Puerperium</p> <p>4.30. Puerperium</p> <p>4.31. Postnatal care,</p> <p>4.32. social obstetrics-</p> <p>4.33. maternal &</p> <p>4.34. perinatal mortality.</p> <p>4.35. Pelvic pain</p> <p>4.36. and its management Musculo-skeletal problems in</p> <p>4.37. An Obstetric Patient, Management.</p> <p>4.38. An Obstetric Patient, Management</p>	
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SW-1 Suggested Sectional Work

(SW): Assignments:

Labour, stage of labour, normal and abnormal labour

Mini Project:

Puerperium &

postnatal care.

Other Activities

(Specify):.

Physiological changes during pregnancy

122BPT24.5: Relate the basic idea of gynecology condition and management

Hour

Item	Hrs
CI	36
LI	00
SW	05
SL	03
Total	44

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO5.1 To Understand Gynecology Condition</p> <p>SO5.2 To learn prenatal and post natal care</p> <p>SO5.3 To learn about Prolapse Uterus, causes of incontinence of urine, type and management</p> <p>SO5.4 Application of Pelvic inflammatory diseases</p> <p>SO5.5 Application of Surgical consideration in obstetrics and gynecology</p>		<p>Unit-5 Gynecology Condition</p> <p>5.1 Importance Gynecological condition</p> <p>5.2 Importance Gynecological condition</p> <p>5.3 A Short Review Of PID,</p> <p>5.4 A Short Review Of PID</p> <p>5.5 Tumors,</p> <p>5.6 Tumors</p> <p>5.7 Malignancies,</p> <p>5.8 Malignancies,</p> <p>5.9 Infertility,</p> <p>5.10 Infertility</p> <p>5.11 Endometriosis,</p> <p>5.12 Endometriosis,</p> <p>5.13 Endometriosis,</p> <p>5.14 Ectopic pregnancy,</p> <p>5.15 Ectopic pregnancy</p> <p>5.16 Ectopic pregnancy</p> <p>5.17 Vesicular mole.</p> <p>5.18 Vesicular mole</p> <p>5.19 Vesicular mole</p> <p>5.20 Prenatal and post-natal care</p> <p>5.21 Prenatal and post-natal care</p> <p>5.22 Prenatal and post-natal care</p> <p>5.23 Prolapse Uterus,</p> <p>5.24 Prolapse Uterus</p> <p>5.25 Prolapse Uterus</p> <p>5.26 Causes Of Incontinence Of Urine,</p> <p>5.27 Causes Of Incontinence Of Urine</p> <p>5.28 Type And Management.\</p> <p>5.29 Type And Management</p> <p>5.30 Pelvic inflammatory diseases</p> <p>5.31 Pelvic inflammatory diseases</p> <p>5.32 Abortion and birth control.</p> <p>5.33 Abortion and birth control</p> <p>5.34 Surgical consideration in obstetrics</p> <p>5.35 Surgical consideration in obstetrics</p> <p>5.36 Surgical consideration in gynecology.</p>	<p>1. PID</p> <p>2. Ectopic pregnancy</p> <p>3. Prolapse Uterus</p>

SW-1 Suggested Sectional Work (SW):

Assignments:

Prolapse Uterus.

Mini Project:

Abortion and birth control

Other Activities (Specify):.

Surgical consideration in obstetrics.

Brief of Hours suggested for the Course Outcome

Course Outcomes	Class Lecture (CI)	Sessional Work (SW)	Self-Learning (SI)	Total hour (CI+SW+SI)
122BPT24.1: Define introduction of general surgery	38	5	3	46
122BPT24.2: Explain the abdominal surgery ,burns, plastic surgery	38	5	3	46
122BPT24.3: Illustrate the basic concepts of the common ophthalmology and e.n.t. condition and its management	38	5	3	46
122BPT24.4: Analyze the basic concepts of obstetrics conditions and management	40	5	3	48
122BPT24.5: Evaluate basic idea of gynecology condition and management	36	5	3	44
Total Hours	190	25	15	230

Suggestion for End Semester Assessment

Suggested Specification Table (For ESA)

CO	Unit Titles	Marks Distribution				Total Marks
		Ap	An	Ev	Cr	
CO-1	Introduction of general surgery					
CO-2	The abdominal surgery ,burns, plastic surgery					
CO-3	The basic concepts of the common ophthalmology and e.n.t. Condition and its management					
CO-4	The basic concepts of obstetrics conditions and management					
CO-5	Basic idea of gynecology condition and management.					
Total						20

Legend: **Ap: Apply,** **An: Analyze,** **Ev: Evaluate** **Cr: Create**

Note. Detailed Assessment rubric need to be prepared by the course wise teachers for above tasks. Teachers can also design different tasks as per requirement, for end semester assessment.

Suggested Instructional/Implementation Strategies:

1. Improved Lecture
2. Tutorial
3. Case Method
4. Group Discussion
5. Role Play
6. Visit to hospitals
7. Demonstration

Suggested Learning Resources:

(a) Books:

S. No.	Title	Author	Publisher	Edition & Year
1	Short Practice of Surgery	Baily & Love	CRC Press	2020.
2	Short practice In Surger	Russell, R.C.G.	Arnold, London	24th edition. CRC Press; 2019.
3	Textbook of Obstetrics	Datta, D.C.	NCBA, Calcutta	6th edition 2004
4	Principles of Gynecology	Jeffcoat's	Elsevier (Mosby)	7th edition. Elsevier (Mosby); 2018
5	Lecture note provided by Faculty of medical sciences, AKS University, Satna .			

Curriculum Development Team

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5. Dr. Poonam Singhariya, Assistant Professor , Department of paramedical science
6. Dr. R.M. Sharma , Professor , Department of paramedical science

CO, POs and PSOs Mapping
Program title: B.P.T (Bachelor of physiotherapy)
Course code122BPT24
Course title: General surgery, obstetrics & Gynecology

Course outcomes	Program outcomes												Program specific outcome			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO2	PSO3	PSO4
	Disciplinary knowledge	Psychomotor Skills	Communication skills	Critical thinking	Problem Solving	Analytical reasoning	Research – Related Skills	Co-operation /Team Work	Socio-cultural and multicultural competency	Awareness of moral, ethical and legal issues	Leadership qualities	Ongoing Learning:	Ability to Patient professional care .	Ability to Demonstrate clinical decision and patient care	Ability to counsel the patients, family,colleagues and students aspects of physiotherapy treatment.	Ability to Work effectively in various professional collaborative places like hospital.
CO1 Find how to extend acquire knowledge regarding the introduction of general surgery	2	2	1	1	2	2	2	1	2	1	2	1	1	2	2	2
CO2: Apply the concepts regarding the abdominal surgery ,burns, plastic surgery,	1	1	2	2	1	2	3	2	1	1	2	2	2	2	2	1
CO3 Learn the basic concepts of the common ophthalmology and e.n.t. condition and its management	2	2	1	1	2	2	2	1	2	1	2	1	1	2	2	2
CO4 Recall the basic concepts of obstetrics conditions and management.	1	1	2	2	3	2	3	2	2	1	3	2	2	3	3	1
CO5: Relate the basic idea of gynecology condition and management.	2	2	1	1	2	2	2	1	2	1	2	1	1	2	2	2

Legends: 1- Low, 2- Medium, 3- High

Course Curriculum Map:

POs & PSOs No.	COs No.& Titles	SOs No.	Laboratory Instruction (LI)	Classroom Instruction(CI)	Self Learning (SL)
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO-1: Define introduction of general surgery	SO1.1 SO1.2 SO1.3 SO1.4 SO1.5	00	Unit-1.0 Introduction Of General Surgery 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38	03
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO 2 : Explain the abdominal surgery ,burns, plastic surgery.	SO2.1 SO2.2 SO2.3 SO2.4 SO2.5	00	Unit-2 The Abdominal Surgery ,Burns, Plastic Surgery. 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38	03
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO3 : Illustrate the basic concepts of the common ophthalmology and e.n.t. condition and its management	SO3.1 SO3.2 SO3.3 SO3.4 SO3.5	00	Unit-3 : The Basic Concepts Of The Common Ophthalmology And E.N.T. Condition And Its Management 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38	03
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO 4: Analyze the basic concepts of obstetrics conditions and management.	SO4.1 SO4.2 SO4.3 SO4.4 SO4.5	00	Unit-4: The Basic Concepts Of Obstetrics Conditions And Management. 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20 21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40	03
PO: 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO 5: Evaluate basic idea of gynecology condition and management	SO5.1 SO5.2 SO5.3 SO5.4 SO5.5		Unit 5: Basic Idea Of Gynecology Condition And Management 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20 21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36	03

YEAR 1I

Course Code: 122BPT25

Course Title: Exercise therapy including yoga

Pre- requisite: Student should have basic knowledge of fundamental posture ,gait of body and how to treat pathological condition by exercise and yoga

Rationale: The students studying principles and practice of the benefits of exercise on physical and mental health, Developing knowledge of exercise testing and assessment methods, Learning to design and implement exercise programs for various populations (e.g., athletes, patients, older adults), Enhancing understanding of exercise physiology and biomechanics, Appreciating the role of exercise in disease prevention and management (e.g., diabetes, heart disease, obesity), Developing skills in exercise leadership and instruction.

Course Outcomes:

Course Code:	122BPT25
Course Title:	Exercise therapy including yoga
Course Outcomes:	
122BPT25.1	Find how to extend introduction to exercise therapy, classification of movements
122BPT25.2	Apply concepts the the the relaxed passive movement- . Muscle strength strengthening technique, endurance training, therapeutic gymnasium. Joint movement-. Accessory movements- glides, traction and approximation, mobilization of peripheral, spinal joints,
122BPT25.3	Learn the basic concepts of the the goniometry:-. Passive stretching-. Relaxation: neuromuscular coordination and p.n.f : co-ordination: lmn1 & umnl, pnf and frenkel's exercise
122BPT25.4	Recall the basic concepts of the suspension therapy:.. Hydrostatics and hydrodynamics: hydrotherapy : soft tissue manipulations. Gait analysis, pathological gaits, gait training.
122BPT25.5	Relate the basic idea of the starting positions - soft tissue manipulation

Scheme of Studies

CODE	Course Code	Course Title	Scheme of studies (Hours/Week)				
			CI	LI	SW	SL	Total Study Hours (CI+LI+SW+SL)
PCC	122BPT25	Exercise therapy including yoga	5	1	1	1	8

Legend: **CI:** Classroom Instruction (Includes different instructional strategies i.e. Lecture (L) and Tutorial (T) and others),
LI: Laboratory Instruction (Includes Practical performances in laboratory workshop, field or other locations using different instructional strategies)
SW: Sessional Work (includes assignment, seminar, mini project etc.),
SL: Self Learning,

Note: SW & SL has to be planned and performed under the continuous guidance and feedback of teacher to ensure outcome of Learning.

Scheme of Examination

Theory

CODE	Course Code	Course Title	Internal Assessment		University Examination			Total
			Theory	Practical	Theory	Viva	Practical	
PCC	122BPT 25	Exercise therapy including yoga	20	20	100	20	40	200

Course-CurriculumDetailing:

This course syllabus illustrates the expected learning achievements, both at the course and session levels, which students are anticipated to accomplish through various modes of instruction including Classroom Instruction (CI), Laboratory Instruction (LI), Sessional Work (SW), and Self Learning (SL). As the course progresses, students should showcase their mastery of Session Outcomes (SOs), culminating in the overall achievement of Course Outcomes (COs) upon the course's conclusion.

122BPT25.1: Find how to extend introduction to exercise therapy, classification of movements

Hours

Item	Hrs
CI	24
LI	08
SW	04
SL	02
Total	38

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO1.1 Understand exercise movements and techniques</p> <p>SO1.2 read and understand manipulation</p> <p>SO1.3 understand coordination and balance</p> <p>SO1.4 understand yoga and poses</p> <p>SO1.5 understand about types of exercises according to conditions</p>	<p>1 Demonstration and learning of active & passive movements of Limbs and spine</p> <p>2.Demonstration and practice of Manual Muscle testing, Goniometry</p> <p>3.Stretching type</p> <p>4.Oxford method</p>	<p>UNIT 1 INTRODUCTION TO EXERCISE THERAPY, CLASSIFICATION OF MOVEMENTS</p> <p>1.1. Introduction to Exercise Therapy</p> <p>1.2. Exercise and physiology of body</p> <p>1.3. Psychogenic and Pharmacological aspects of exercise</p> <p>1.4. Classification of movements</p> <p>1.5. Active voluntary movements</p> <p>1.6. Free, assisted</p> <p>1.7. Resisted</p> <p>1.8. Indication, contraindications,</p> <p>1.9. Advantages and techniques of various types of active exercises</p> <p>1.10. Clinical methods of strengthening of various muscle group</p> <p>1.11. Involuntary movements</p> <p>1.12. Passive movements: Definition</p> <p>1.13. Types- Relaxed,</p> <p>1.14. Forced</p> <p>1.15. Stretching type. Indications, contraindications, advantages</p> <p>1.16. Techniques of various passive movements.</p> <p>1.17. Voluntary Movements :- Free exercises</p> <p>1.18. Assisted exercises</p> <p>1.19. Resisted exercise</p> <p>1.20. Free exercises – Classification technique effects of free exercise on various systems</p> <p>1.21. Resisted exercises – technique</p> <p>1.22. Types of resistance, SET system (heavy resisted exercise</p> <p>1.23. Oxford method</p> <p>1.24. Techniques of various passive movements.</p>	<p>1. Learn the key points movement</p> <p>2. Principle of exercise therapy and About yoga</p>

SW-1 Suggested Sectional Work (SW):

Assignments:

Movements, Cell organization

Mini Project:

Exercises technique

Other Activities (Specify):

Exercises demonstration and practical

122BPT25.2: Apply concepts the the relaxed passive movement, Muscle strength strengthening technique, endurance training, therapeutic gymnasium. Joint movement-. Accessory movements- glides, traction and approximation, mobilization of peripheral, spinal joints,

Hrs

Item	Hrs
CI	26
LI	08
SW	04
SL	02
Total	40

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO2.1 To Understand ,Classification of relaxed passive movements, Technique, effects and uses of relaxed passive movements.</p> <p>SO2.2 Type of muscle Work and contractions, Torque of muscle work, Muscle assessment M.R.C. grading, Principles of muscle Strengthening</p> <p>SO2.3 re-education, early re-education of a paralyzed muscle etc.</p> <p>SO2.4. Strengthening technique, Endurance training</p> <p>SO2.5.Mobilization of peripheral, spinal joints, techniques and grading in detail.</p>	<p>1. muscle work and contraction</p> <p>2. muscle strength exercises</p> <p>3. Manual Muscle Testing</p> <p>4. Mobilization of joint</p>	<p>Unit-2. RELAXED PASSIVE MOVEMENT- . MUSCLE STRENGTH STRENGTHENING TECHNIQUE, ENDURANCE TRAINING, THERAPEUTIC GYMNASIUM. JOINT MOVEMENT-.ACCESSORY MOVEMENTS- GLIDES, TRACTION AND APPROXIMATION MOBILIZATION OF PERIPHERAL, SPINAL JOINTS</p> <p>2.1Relaxed passive movement- Definition,</p> <p>2.2Classification of relaxed passive movements,</p> <p>2.3Technique, effects</p> <p>2.4 uses of relaxed passive movements..</p> <p>2.5Muscle strength –</p> <p>2.6 Anatomy and Physiology of muscle tissue,</p> <p>2.7Causes of muscle weakness/paralysis,</p> <p>2.8Prevention of muscle weakness/paralysis.</p> <p>2.9Type of muscle work</p> <p>2.10 contractions,</p> <p>2.11Torque of muscle work,</p> <p>2.12Muscle assessment M.R.C.</p> <p>2.13grading, Principles of muscle strengthening/re-education,early re-education of a paralyzed muscle etc</p> <p>2.15Endurance training,</p> <p>2.16Therapeutic Gymnasium.</p> <p>2.17Manual Muscle Testing</p> <p>2.18 Concept, introduction, significance and limitations.</p> <p>2.19Grade systems,</p> <p>2.20Techniques of Muscle testing.</p> <p>2.21Emphasis on skills to grade upper, lower limb,</p> <p>2.22neck and trunk muscles including trick movements.</p> <p>2.23Joint movement-Classification of joint movements,</p> <p>2.24Causes for restrictions of joint movement, prevention of restriction of joint range of motion.</p> <p>2.25principles of mobilization of joint, increasing its range of motion, technique of mobilization of stiff joint. Accessory</p>	<p>1.General introduction of general movements and technique</p> <p>2.Learn about muscle work</p>

		movements- glides, traction and approximation 2.26Mobilization of peripheral, spinal joints, techniques and grading in detail.	
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SW-1 Suggested Sectional

Work(SW): Assignments: .

Relaxed passive movement

Mini Project:

Mobilization

Other Activities (Specify): techniques of exercise

122BPT25.3 . Learn the basic concepts of the the goniometry: Passive stretching-. Relaxation: neuromuscular coordination and p.n.f : co-ordination: lmn1 & umnl, pnf and frenkel's exercise

Item	Hrs
CI	22
LI	08
SW	04
SL	02
Total	38

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO3.1ToUnderstand Measurement of various joints range in normal and disease condition</p> <p>SO3.2 To learn about Description of fatigue and spasm & factors. General causes, signs and symptoms of fatigue.</p> <p>SO3.3.Neuromuscular coordination and P.N.F</p> <p>SO3.4 Various reduction techniques and facilitating methods.</p> <p>SO3.5 Factors for coordinated movements, causes of incoordination, Discoordination</p>	<p>1. Practical goniometry</p> <p>2. Techniques of Relaxation</p> <p>3. P.N.F :</p> <p>4. Frenkel's exercise</p>	<p>Unit-3.GO NIOMETRY: PASSIVE STRETCHING-RELAXATION NEUROMUSCULAR COORDINATION AND P.N.FCO-ORDINATION: LMNL & UMNL, , PNF AND FRENKEL'S EXERCISE</p> <p>3.1 Goniometry: Measurement of various joints range in normal and disease condition.</p> <p>3.2 Different techniques of goniometry.</p> <p>3.3 Limb length measurements.</p> <p>3.4 Passive stretching-</p> <p>3.5 Aims, Principles, Indications, Techniques</p> <p>3.6 contra indications.</p> <p>3.7 Relaxation: Description of fatigue and spasm & factors.</p> <p>3.8 General causes,</p> <p>3.9 signs and symptoms of fatigue.</p> <p>3.10Neuromuscular coordination</p> <p>3.11P.N.F: Basic theory of proprioceptive – neuromuscular facilitation techniques,</p> <p>3.12Functional Re-education Exercises. Re-education of muscles: • Concept, technique, spatial and temporal summation</p> <p>3.13 • Various reduction techniques and facilitating methods. •</p> <p>3.14 Progressive strengthening of various muscle groups in Grade-I-Grade IV. •</p> <p>3.15 Muscle strengthening technique</p> <p>3.16 PNF - Principles of PNF, indications, contra indications</p> <p>3.17 techniques, limb patterns</p> <p>3.18 Co-ordination: Balance – Static and Dynamic, Definition of co-ordinated movements,</p> <p>3.19 Factors for coordinated movements, causes of incoordination,</p> <p>3.20 Discoordination: LMNL & UMNL, cerebellar lesion, loss of kinesthetic sense, leprosy, syringomyelia).</p> <p>3.21 Principles of re-education of coordinated movements,</p> <p>3.22 techniques of coordinated exercises Reeducation of balance and coordination: PNF and Frenkel's exercise</p>	<p>1. Limb length measurements.</p> <p>2 Passive stretching</p>

SW-1 Suggested Sectional Work (SW):
Assignments:

Muscle strengthening technique – PNF - Principles of PNF, indications, contra indications, techniques Mini Project:Re-education techniques Other Activities (Specify):

Frenkel's exercise

122BPT25.4: Recall the basic concepts of the suspension therapy: Hydrostatics and hydrodynamics: hydrotherapy: soft tissue manipulations. Gait analysis, pathological gaits, gait training

Item	Hrs
CI	22
LI	08
SW	04
SL	02
Total	36

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO4.1 To Understand movements</p> <p>SO4.2 To learn about Hydrodynamics</p> <p>SO4.3 . To learn about Equilibrium</p> <p>SO4.4 Properties of water</p> <p>SO4.5 Gait analysis, Pathological gaits, Gait training.</p>	<p>1.Suspension Therapy:</p> <p>2, Hydrotherapy exercise</p> <p>3. Exercise of the knee</p> <p>4. Gait cycle and pathologica;l gait</p>	<p>Unit 4 : SUSPENSION THERAPY: HYDROSTATIC AND HYDRODYNAMICS: HYDROTHERAPY : SOFT TISSUE MANIPULATIONS. GAIT ANALYSIS, PATHOLOGICAL GAITS, GAIT TRAINING</p> <p>4.1. Suspension Therapy Principles of suspension,</p> <p>4.2. Type of suspension</p> <p>4.3. Therapeutic effects and uses of suspension therapy,</p> <p>4.4. Hydrodynamics: History</p> <p>4.5. Properties of water</p> <p>4.6. Specific gravity</p> <p>4.7. Hydrostatic pressure</p> <p>4.8. Archimedes principle</p> <p>4.9. Buoyancy-law of floatation</p> <p>4.10. Effect of buoyancy on movements performed in water</p> <p>4.11. Equilibrium of a floating body,</p> <p>4.12. Bernoulli's theorem,</p> <p>4.13. Physiological effects of exercise in water</p> <p>Hydrotherapy Indication,</p> <p>4.14. Contraindication</p> <p>4.15. Hydrotherapy exercise for all age groups</p> <p>4.16. Types of pools and baths Soft tissue manipulations</p> <p>4.17. Techniques of application, Kneading</p> <p>4.18. Picking up</p> <p>4.19. Rolling (back) Clapping,</p> <p>4.20. Tapping, Friction. Isometric exercise and Isotonic exercise.. Exercises of the shoulder,HIP</p> <p>4.21. Exercise of the knee and elbow and evaluation.</p> <p>4.22. Spinal exercises including neck exercises. Gait analysis, Pathological gaits, Gait training.</p>	<p>1. Therapeutic effects and uses of suspension therapy,</p> <p>2. Movements</p> <p>3. Muscle power.. Hydrostatics and Hydrodynamics:</p> <p>4. Hydrother apy</p>

SW-1 Suggested Sectional Work (SW): soft tissue manipulation Assignments:

Gait cycle

Mini Project:

Hydrotherapy

Other Activities (Specify):

Exercise.. Exercises of the shoulder,hip

122BPT25.5: Relate the basic idea of the starting positions - soft tissue manipulation

Hours

Item	Hrs
CI	26
LI	08
SW	04
SL	02
Total	38

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO5.1 To Understand starting positions and derives position</p> <p>SO5.2 To learn about muscle work.</p> <p>SO5.3. To learn about effect of positions</p> <p>SO5.4 learn about soft tissue manipulation.</p> <p>SO5.5 indication and contraindication of techniques.</p>	<p>1.Demonstrate starting positions</p> <p>2.Drived position</p> <p>3..Soft tissue manipulation.</p> <p>4.massage</p>	<p>Unit-5 Starting positions - . Soft tissue manipulation -</p> <p>5.1 Description of muscle work in fundamental position</p> <p>5.2 Standing position</p> <p>5.3 Kneeling</p> <p>5.4 Hanging</p> <p>5.5 Lying</p> <p>5.6 Sitting</p> <p>5.7 Drive positions description</p> <p>5.8 Drive positions description</p> <p>5.9 Drive positions description</p> <p>5.10 Altration of upper extremities</p> <p>5.11 Altration of lower extremities</p> <p>5.12 Altration of trunk</p> <p>5.13 Importance of fundamental and derived types</p> <p>5.14 Effects of individual positions</p> <p>5.15 Uses of individual positions</p> <p>5.16 Soft tissue manipulation - History,</p> <p>5.17 Definition</p> <p>5.18 types and their rationale,</p> <p>5.19 General effects,</p> <p>5.20 General effects</p> <p>5.21 General effects</p> <p>5.22 Local effects of individual manipulation (physiological effects)</p> <p>5.23 Uses,</p> <p>5.24 Contra-indications</p> <p>5.25 Techniques of application</p> <p>5.26 Techniques of application</p>	<p>1. .fundamental positions</p> <p>2. History of manipulation</p>

SW-1 Suggested Sectional Work

(SW): Assignments:

Soft tissue manipulation

Mini Project: Fundamental positions

Other Activities

(Specify):

Starting position

Brief of Hours suggested for the Course Outcome

Course Outcomes	Class Lecture (CI)	Laboratory Instruction (LI)	Sessional Work (SW)	Self-Learning (SL)	Total hour (CI+SW+SI)
122BPT25.1: Define Find how to extend introduction to exercise therapy, classification of movements	24	08	4	2	38
122BPT25.2: Explain Apply concepts the the relaxed passive movement- . Muscle strength strengthening technique, endurance training, therapeutic gymnasium. Joint movement-. Accessory movements- glides, traction and approximation, mobilization of peripheral, spinal joints.	26	08	4	2	40
122BPT25.3: Illustrate Learn the basic concepts of the the goniometry:-. Passive stretching-. Relaxation: neuromuscular coordination and p.n.f : co-ordination: lmn & umnl, pnf and frenkel's exercise	22	08	4	2	36
122BPT25.4: Analyze the basic concepts of the suspension therapy:... Hydrostatics and hydrodynamics: hydrotherapy : soft tissue manipulations. Gait analysis, pathological gaits, gait training	22	08	4	2	36
122BPT25.5: Evaluate the basic idea of the starting positions - soft tissue manipulation	26	08	4	2	40
Total Hours	120	40	20	10	190

Suggestion for End Semester Assessment

Suggested Specification Table (For ESA)

CO	Unit Titles	Marks Distribution				Total Marks
		Ap	An	Ev	Cr	
CO-1	Introduction to exercise therapy, classification of movements					
CO-2	The relaxed passive movement- . Muscle strength strengthening technique, endurance training, therapeutic gymnasium. Joint movement-. Accessory movements- glides, traction and approximation, mobilization of peripheral, spinal joints					
CO-3	The basic concepts of the the goniometry:-. Passive stretching-. Relaxation: neuromuscular coordination and p.n.f : co-ordination: lmn1 & umnl, pnf and					
CO-4	The suspension therapy:.. Hydrostatics and hydrodynamics: hydrotherapy : soft tissue manipulations. Gait analysis, pathological gaits, gait training					
CO-5	The starting positions - soft tissue manipulation.					
Total						100

Legend: Ap: Apply, An: Analyze, Ev: Evaluate Cr: Create

Note. Detailed Assessment rubric need to be prepared by the course wise teachers for above tasks. Teachers can also design different tasks as per requirement, for end semester assessment.

Suggested Instructional/Implementation Strategies:

1. Improved Lecture
2. Tutorial
3. Case Method
4. Group Discussion
5. Role Play
6. Visit to hospitals
7. Demonstration

Suggested Learning Resources:

(a) Books:

S. No.	Title	Author	Publisher	Edition & Year
1	Practical Exercise Therapy	Hollis, M. and Cook, P.F. Blackwell, Oxford	Blackwell, Oxford	2003
2	Principles of Exercise Therapy	Gardiner, Dena M	CBS, New Delhi	2018
3	Clinical Kinesiology for Physical Therapy	Lippert, Lynn	Jaypee, New Delhi	2019
4	Yoga stretching and relaxation for sports men	Capt. M. Rajan	Sterling Publishers Pvt. Ltd., New Delhi	2004
5	Lecture note provided by Faculty of medical sciences, AKS University, Satna .			

Curriculum Development Team

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CO, POs and PSOs Mapping
Program title: B.P.T (Bachelor of physiotherapy)
Course code122BPT25
Course title: Exercise therapy including yoga

Course outcomes	Program outcomes												Program specific outcome			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO2	PSO3	PSO4
	Disciplinary knowledge	Psychomotor Skills	Communication skills	Critical thinking	Problem Solving	Analytical reasoning	Research – Related Skills	Co-operation /Team Work	Socio-cultural and multicultural competency	Awareness of moral, ethical and legal issues	Leadership qualities	Ongoing Learning:	Ability to Patient professional care	Ability to Demonstrate clinical decision patient care	Ability to counsel the patients, family,colleagues and students aspects of physiotherapy treatment.	Ability to Work effectively in various professional collaborative places like hospital.
CO 1: Find How To Extend Introduction To Exercise Therapy,	1	1	2	2	3	2	1	2	2	1	3	2	2	.	3	1
CO2: Apply Concepts The The The Relaxed Passive Movement- . Muscle Strength Strengthening Technique, Endurance Training, Therapeutic Gymnasium.	1	1	2	2	1	2	.	2	1	1	2	2	2	.	2	1
CO3 Learn The Basic Concepts Of The The Goniometry:-. Passive Stretching-. Relaxation: Neuromuscular Coordination And P.N.F : Co-Ordination.,	2	2	1	1	2	2	2	1	2	1	2	1	1	2	2	2
CO4 Recall The Basic Concepts Of Hydrotherapy : Soft Tissue Manipulations. Gait Analysis, Pathological Gaits, Gait Training	3	2	2	2	3	2	1	2	2	1	2	2	1	1	3	2
CO5: Relate The Basic Idea Of The Starting Positions - Soft Tissue Manipulation	.	.	.	1	1	3	.	3	1	1	2	2	1	1	1	3

Legends: 1- Low, 2- Medium, 3- High

Course Curriculum Map:

POs & PSOs No.	COs No.& Titles	SOs No.	Laboratory Instruction (LI)	Classroom Instruction(CI)	Self Learning (SL)
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO-1: Define Find how to extend introduction to exercise therapy, classification of movements	SO1.1 SO1.2 SO1.3 SO1.4 SO1.5	08	Unit-1.0 Introduction to exercise therapy, classification of movements 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24	02
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO 2 : Explain Apply concepts the the relaxed passive movement- . Muscle strength strengthening technique, endurance training, therapeutic gymnasium. Joint movement- . Accessory movements- glides, traction and approximation, mobilization of peripheral, spinal joints.	SO2.1 SO2.2 SO2.3 SO2.4 SO2.5	08	Unit-2 The relaxed passive movement- . Muscle strength strengthening technique, endurance training, therapeutic gymnasium. Joint movement- . Accessory movements- glides, traction and approximation, mobilization of peripheral, spinal joints 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26	02
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO3 : Illustrate Learn the basic concepts of the the goniometry:-. Passive stretching-. Relaxation: neuromuscular coordination and p.n.f : co-ordination: lmn1 & umnl, pnf and frenkel's exercise	SO3.1 SO3.2 SO3.3 SO3.4 SO3.5	08	Unit-3 The basic concepts of the the goniometry:-. Passive stretching-. Relaxation: neuromuscular coordination and p.n.f : co-ordination: lmn1 & umnl, pnf and 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22	02
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO 4: Analyze the basic concepts of the suspension therapy:.. Hydrostatics and hydrodynamics: hydrotherapy : soft tissue manipulations. Gait analysis, pathological gaits, gait training.	SO4.1 SO4.2 SO4.3 SO4.4 SO4.5	08	Unit-4: The suspension therapy:.. Hydrostatics and hydrodynamics: hydrotherapy : soft tissue manipulations. Gait analysis, pathological gaits, gait training 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22	02
PO: 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO 5: Evaluate the basic idea of the starting positions - soft tissue manipulation	SO5.1 SO5.2 SO5.3 SO5.4 SO5.5	08	Unit 5: The starting positions - soft tissue manipulation 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26	02

YEAR 11

Course Code: 122BPT26

Course Title: Electrotherapy

Pre- requisite: Student should have basic knowledge of electrical modalities their uses indication and contraindication

Rationale: The students studying principles and practice of the physiological effects of electrical currents on the body, Learning to use electrotherapy modalities safely and effectively, Appreciating the clinical applications of electrotherapy in various conditions (e.g., pain, inflammation, wounds, muscle weakness), Developing skills in selecting and using appropriate electrotherapy modalities for specific patient needs, Staying current with advances in electrotherapy technology and research

Course Outcomes:

Course Code:	122BPT26
Course Title:	Electrotherapy
Course Outcomes:	
122BPT26.1	Find how to extend introduction of nerve muscle physiology faradic current galvanic current and tens
122BPT26.2	Apply concepts the the the medium --frequency currents bio feedback , advanced electrotherapy
122BPT26.3	Learn the basic concepts of high frequency current, short wave diathermy, microwave therapy, ultrasonic therapy.
122BPT26.4	Recall the basic concepts of actinotherapy infra-red ultraviolet radiation laser
122BPT26.5	Relate the basic idea of the thermal therapy modalities

Scheme of Studies

CODE	Course Code	Course Title	Scheme of studies (Hours/Week)				
			C I	LI	SW	SL	Total Study Hours (CI+LI+SW+SL)
PCC	122BPT26	Electrotherapy	5	1	1	1	8

- Legend:**
- CI:** Classroom Instruction (Includes different instructional strategies i.e. Lecture (L) and Tutorial (T) and others),
 - LI:** Laboratory Instruction (Includes Practical performances in laboratory workshop, field or other locations using different instructional strategies)
 - SW:** Sessional Work (includes assignment, seminar, mini project etc.),
 - SL:** Self Learning,
 - C:** Credits.

Note: SW & SL has to be planned and performed under the continuous guidance and feedback of teacher to ensure outcome of Learning.

Scheme of Examination

Theory

CODE	Course Code	Course Title	Internal Assessment		University Examination			Total
			Theory	Practical	Theory	Viva	Practical	
PCC	122B PT26	Electrotherapy	20	20	100	20	40	200

Course-Curriculum Detailing:

This course syllabus illustrates the expected learning achievements, both at the course and session levels, which students are anticipated to accomplish through various modes of instruction including Classroom Instruction (CI), Laboratory Instruction (LI), Sessional Work (SW), and Self Learning (SL). As the course progresses, students should showcase their mastery of Session Outcomes (SOs), culminating in the overall achievement of Course Outcomes (COs) upon the course's conclusion.

122BPT26.1: Find how to extend introduction of nerve muscle physiology faradic current galvanic current and tens

Hours.

Item	Hrs
CI	32
LI	08
SW	02
SL	04
Total	46

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
SO1.1 Understand introduction nerve muscle physiology. SO1.2 To learn about faradic current SO1.3 Acquire Knowledge of galvanic currents SO1.4 Acquire Knowledge of electro diagnosis SO1.5 Application of iontophoresis.	1. Action potential 2. Faradic Current 3. Galvanic Current 4. Electrodiagnosis TENS	Unit 1:- Nerve Muscle Physiology Faradic Current Galvanic Current 1.1 Resting potential, 1.2 Action potential, 1.3 propagation of action potential, 1.4 myelinated 1.5 unmyelinated nerve fiber, Motor unit, 1.6 Synapse and Synaptic transmission of Impuls 1.7 Effect of negative and positive electrodes on nerve and accommodation of the nerve 1.8 Faradic Current - Definition, Characteristic of original Faradic current, 1.9 Modified faradic plane faradic current interrupted faradic current 1.10 surged faradic current 1.11 parameters, indication effect on denervated muscles 1.12 innervated muscles technique of application, 1.13 group muscles stimulation 1.14 , individual muscle stimulation, 1.15 faradic bath, faradic under pressure, 1.16 pelvic floor muscle reeducation, 1.17 therapeutic effect of faradic current, 1.18 contraindication and dangers 1.19 Galvanic Current – 1.20 Classification of Galvanic current 1.21 Plain Galvanic Current :- Parameters of plain Galvanic current, 1.22 Principle of Iontophoresis technique of Iontophoresis (Bath method, bath and pad method, pad method) 1.23 Common drugs used in Iontophoresis with its polarity, 1.24 therapeutic effect, contraindication and dangers of plain galvanic current 1.25 Interrupted Galvanic current (Interrupted direct current I.D.C.) - Definition of IDC, parameters,	1. myelinated and unmyelinated nerve fiber, Modified faradic plane faradic current interrupted faradic current and surged faradic current.

		1.26 wave form, duration and amplitude of the pulse effect of strength and duration on muscles 1.27 nerves technique of stimulation of individual muscles and group muscles, 1.28 therapeutic effect, contraindication and dangers and precaution of IDC 1.29 electrodiagnosis – s.d.curve,chronaxie and rheobase,nerve conduction,e.mg., nerve conduction velocity 1.31 TENS:- Definition, parameters and wave form, 1.32 pain gate theory of pain modulation, techniques of application, therapeutic effect and contraindication	
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SW-1 Suggested Sectional Work (SW):

Assignment:

Faradic Current - Definition, Characteristic of original

Faradic current, Mini Project:

Galvanic Current – Classification of

Galvanic current. Other Activities

(Specify):

TENS

122BPT26.2 Apply concepts the the the medium frequency currents bio feedback , advanced electrotherapy

Hours.

Item	Hrs
CI	24
LI	08
SW	02
SL	04
Total	38

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO2.1 To Understand about Medium frequency currents</p> <p>SO2.2 To Understand. Interferential therapy</p> <p>SO2.3 Analysis of Bio Feedback</p> <p>SO2.4Analysis of Advanced electrotherapy</p> <p>SO2.5Application of TENS electrotherapy modalities</p>	<p>1. Medium frequency currents</p> <p>2. Interferential therapy</p> <p>3. Bio Feedback in children.</p> <p>4. Advanced electrotherapy</p>	<p>Unit 2: MEDIUM FREQUENCY CURRENTS BIO FEEDBACK , ADVANCED ELECTROTHERAPY</p> <p>2.1 Medium frequency currents</p> <p>2.2 Definitions,</p> <p>2.3 effects,</p> <p>2.4 indications,</p> <p>2.5 techniques of application,</p> <p>2.6 contraindications</p> <p>2.7 Interferential therapy</p> <p>2.8 Physiological,</p> <p>2.9 therapeutic effects &</p> <p>2.10 dangers,</p> <p>2.11 Indications &</p> <p>2.12 contra indications</p> <p>2.13 Technique and method of applications,</p> <p>2.14 Dosimetry</p> <p>2.15 Bio Feedback: Introduction, principles of Bio feedback,</p> <p>2.16 Therapeutic effects of Bio Feedback, Indication and Contraindications, Techniques of Treatment</p> <p>2.17 Advanced electrotherapy:</p> <p>2.18 Computerization of electrotherapy modalities</p> <p>2.19 Programming of parameter of treatment</p> <p>2.20 Appropriate Selection and combination of parameters in therapy</p> <p>2.21 Combined therapy-</p> <p>2.22 Microwave with traction,</p> <p>2.23 Ultrasonic therapy with stimulation, IFT</p> <p>2.24 TENS-Principles, uses, indications etc</p>	<p>1. 1 Medium frequency currents</p> <p>2. Interferential therapy</p> <p>3. Bio Feedback in children.</p> <p>3. Advanced electrotherapy</p>

SW-1 Suggested Sectional Work (SW):

Assignments:

Techniques of application

OF MWD Mini Project

Techniques of

application OF IFT

Other Activities

(Specify):
TENS-Principles, uses, indications etc

122BPT26.3 Learn the basic concepts of high frequency current, short wave diathermy, microwave therapy, ultrasonic therapy.

Hours

Item	Hrs
CI	30
LI	08
SW	02
SL	04
Total	44

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
SO3.1 Understand high frequency current SO3.2 To understand SWD SO3.3 To learn about of MWD SO3.4 Analysis of ultrasonic therapy SO3.5 Application of UST	1. SWD 2. MWD 3. ULTRASOUND THERAPY 4. Dosimetry	Unit 3:- HIGH FREQUENCY CURRENT SHORT WAVE DIATHERMY MICROWAVE DIATHERMY ULTRASONIC THERAPY: 3.1 High frequency current 3.2 Introduction, 3.3 Principle of application (Capacitor field methods and conductive field methods) 3.4 Preparation of patient, 3.5 Therapeutic effects 3.6 contraindication and 3.7 dangers of SWD. 3.8 Methods of application-capacitor and induction electrode, 3.8 precautions and Potential harmful effects of treatment, 3.9 Dosimetry 3.10 Pulsed S.W.D.:- 3.11 Definition, 3.12 Characteristic, 3.13 Principles of Treatment, 3.14 Therapeutic effects, 3.15 Indications, 3.16 Technique of application, 3.17 Contraindications and dangers 3.18 Microwave Diathermy:- 3.19 Definition, 3.20 characteristic of wave, 3.21 properties of microwave, 3.22 technique of application, 3.23 Therapeutic effects, 3.24 contraindication, and dangers, , 3.25 precautions and potential harmful effects, 3.26 Dosimetry 3.27 Ultrasonic therapy: 3.28 Physiological and therapeutic effects & potential harmful effects. 3.29 Indications, contraindications, methods of application and precautions, 3.30 Dosimetry	1. Effective Communication. 2. Somatoform and dissociate disorders.

SW-1 Suggested Sectional Work
 (SW): Assignments:
 Preparation of patient for SWD

Mini Project
Biological effect of
ultrasound Other
Activities
(Specify):
Indication of
MWD

122BPTH26.4 Recall the basic concepts of actinotherapy infra-red ultraviolet radiation laser

Hours.

Item	Hrs
CI	23
LI	08
SW	02
SL	04
Total	37

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO1.1 Understand about INFRARED</p> <p>SO1.2 to learn ultraviolet radiation</p> <p>SO1.3 Analysis of laser apparatus</p> <p>SO1.4Analysis of Comparison between UVR & IR Therapy</p> <p>SO1.5 Application of laser and infra red</p>	<p>1. Infra-Red</p> <p>2. Ultraviolet Radiation</p> <p>3.LASER</p> <p>4.Comparison between UVR & IR</p>	<p>Unit 4:- ACTINOTHERAPY INFRA-RED ULTRAVIOLET RADIATION LASER</p> <p>4.1 Infra-Red:-</p> <p>4.2 Introduction,</p> <p>4.3 Classification,</p> <p>4.4 Penetration Depth,</p> <p>4.5 Techniques Of Application,</p> <p>4.6 Dangers And Contraindications</p> <p>4.7 Ultraviolet Radiation :-</p> <p>4.8 Introduction,</p> <p>4.9 Classification Of Ultraviolet Rays, Penetration Depth,</p> <p>4.10 Effect Of Ultraviolet,</p> <p>4.11 Physiological And Therapeutic Effects- Photosensitization, Test Dose Calculation, Technique Of Application,(Contact methods Non Contact Methods) Physiological And Therapeutic Effect, Indications And Contraindications , Potential Harmful Effects.</p> <p>4.12 Dangers,</p> <p>4.13 Methods Of Application, Sensitizes, Filters, Dosage, Wavelength, Penetration, Tolerance, Treatment / Application Condition Wise.</p> <p>4.14 Comparison Between Uvr & Ir Therapy</p> <p>4.15 Laser</p> <p>4.16 Definition,</p> <p>4.17 Principle Of Application, (Contact Methods Non Contact Methods)</p> <p>4.18 Technique Of Application,</p> <p>4.19 Therapeutic Effect And Potential Harmful Effects ,</p> <p>4.20 Dose Calculation,</p> <p>4.21 indications,</p> <p>4.22 Contraindications And</p> <p>4.23 Dangers</p>	<p>1. scope of sociology and relation of psychology, social psycholog and ethics.</p> <p>2. Concept of social groups.</p>

SW-1 Suggested Sectional Work (SW):

Assignments:

The effect of sickness on family and psychosomatic disease and their importance of physiotherapy. Mini Project:

Rural community features and urban community features

122BPTH.26.5 Relate the basic idea of the thermal therapy modalities

Hours

Item	Approx. Hrs
CI	11
LI	08
SW	02
SL	04
Total	25

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO1.1 Understand about concept of culture and behavior.</p> <p>SO1.2 Understand cultural meaning of sickness and health disorder.</p> <p>SO1.3 Learn about social changes and factors of social changes.</p> <p>SO1.4 Understand about social changes and health program and the role of social planning in the improvement of health and in rehabilitation.</p> <p>SO1.5 Application of social security and social legislation in relation to the disabled.</p>	<p>1. Therapeutic effects and uses</p> <p>2. Paraffin wax bath therapy</p> <p>3. Techniques of Application</p> <p>4. Hydro collar packs</p>	<p>Unit 5:- THERMAL THERAPY MODALITIES.</p> <p>5.1 Therapeutic effects and uses,</p> <p>5.2 Techniques and applications Indications, contraindications, precautions</p> <p>5.3 Potential harmful effects of various heat modalities</p> <p>5.4 Paraffin wax bath therapy - Introduction, Preparation of wax, preparation of patient, Method of application,</p> <p>5.5 Therapeutic Effects, Indications and Contraindications</p> <p>5.6 Hydro collar packs (Heating pad, and Moist heat): - Introduction, methods of application, indication, contra indication</p> <p>5.7 Whirlpool and moist heat Heating pads Hot air chambers, fluidotherapy</p> <p>5.8 Cryotherapy:- Introduction, Physical Principles,</p> <p>5.9 Physiological and Therapeutic effects,</p> <p>5.10 Techniques of Application, Indications, precautions and Potential harmful effects of treatment,</p> <p>5.11 Contraindications and dangers, Dosimetry.</p>	<p>1. Techniques and applications Indications, contraindications, precautions</p> <p>Cryotherapy:- Introduction</p>

SW-1 Suggested Sectional Work (SW):

Assignments:

The effect of sickness on family and psychosomatic disease and their importance of physiotherapy.

Mini Project:

Rural community features and urban community features

Brief of Hours suggested for the Course Outcome

Course Outcomes	Class Lecture (CI)	Sessional Work (SW)	Self-Learning (SI)	Total hour (CI+SW+SI)
122BPTH.26.1: Define introduction of nerve muscle physiology faradic current galvanic current and tens	32	2	4	17
122BPTH.26.2: Explain the the medium --frequency currents bio feedback , advanced electrotherap	24	2	4	8
122BPTH.26.3: Illustrate the basic concepts of high frequency current, short wave diathermy, microwave therapy, ultrasonic therapy	30	2	4	26
122BPTH.26.4: Analyze the basic concepts of actinotherapy infra-red ultraviolet radiation laser	23	2	4	24
122BPTH.26.5: Evaluate the basic idea of the thermal therapy modalities	11	2	4	25
Total Hours	120	10	20	150

Suggestion for End Semester Assessment

Suggested Specification Table (For ESA)

CO	Unit Titles	Marks Distribution				Total Marks
		Ap	An	Ev	Cr	
CO-1	Introduction Of Nerve Muscle Physiology Faradic Current Galvanic Current And Tens					
CO-2	The Medium --Frequency Currents Bio Feedback , Advanced Electrotherapy					
CO-3	The Basic Concepts Of High Frequency Current, Short Wave Diathermy, Microwave Therapy, Ultrasonic Therapy					
CO-4	The Basic Concepts Of Actinotherapy Infra-Red Ultraviolet Radiation Laser					
CO-5	The Thermal Therapy Modalities.					
Total						100

Legend: Ap: Apply, An: Analyze, Ev: Evaluate Cr: Create

Note. Detailed Assessment rubric need to be prepared by the course wise teachers for above tasks. Teachers can also design different tasks as per requirement, for end semester assessment.

Suggested Instructional/Implementation Strategies:

1. Improved Lecture
2. Tutorial
3. Case Method
4. Group Discussion
5. Role Play
6. Visit to hospitals
7. Demonstration

Suggested Learning Resources:

(a) Books:

S. No.	Title	Author	Publisher	Edition & Year
1	Clayton's Electrotherapy: Theory and Practice	Froster, A. and Palastanga, N	. AITBS, Delhi	Eighth 2005
2	Electrotherapy Explained: Principles	Jhon, Low and Ann, Reed	Butterworth Heine, Oxford	Fourth 2008
3	Clinical Electrotherapy	Nelson, R.M. and Currier, D.P.	Appleton and Lange	Third 1999
4	Electrotherapy	B.K.Nanda,	Jaypee Publication, New Delhi	Second
5	Lecture note provided by Faculty of Medical science, AKS University, Satna .			

Curriculum Development Team

1. Professor (Dr.) GP Richariya, Dean, Faculty of Medical Science, AKS University
2. Dr. Debjcet dutta Principal Department of paramedical science AKS University ,
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6. Dr. R.M. Sharma , Professor , Department of paramedical science

CO, POs and PSOs Mapping
Program title: B.P.T (Bachelor of physiotherapy)
Course code: 122BPT26
Course title: Electrotherapy

Course outcomes	Program outcomes												Program specific outcome			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO2	PSO3	PSO4
	Disciplinary knowledge	Psychomotor Skills	Communication skills	Critical thinking	Problem Solving	Analytical reasoning	Research – Related Skills	Co-operation /Team Work	Socio-cultural and multicultural competency	Awareness of moral, ethical and legal issues	Leadership qualities	Ongoing Learning:	Ability to Patient professional care .	Ability to Demonstrate clinical decision patient care	Ability to counsel the patients, family,colleagues and students aspects of physiotherapy treatment.	Ability to Work effectively in various professional collaborative places like hospital.
CO1: understand introduction of nerve muscle physiology, faradic current , galvanic current and TENS	1	1	2	2	3	2	3	2	2	1	3	2	2	3	3	1
CO2: acquire knowledge regarding the medium frequency currents, biofeedback, advanced electrotherapy.	1	1	2	2	1	2	3	2	1	1	2	2	2	2	2	1
CO3: acquire knowledge regarding the high frequency currents, SWD, MWD, UST	2	2	1	1	2	2	2	1	2	1	2	1	1	2	2	2
CO4: acquire knowledge regarding the action therapy, infrared, ultraviolet , radiation therapy LASER.	3	2	2	2	3	2	3	2	2	1	2	3	1	3	3	2
*: acquire knowledge regarding the thermal therapy modalities	.	.	.	1	1	3	3	3	1	1	2	2	1	3	1	3

Legends: 1- Low, 2- Medium, 3- High

Course Curriculum Map:

POs & PSOs No.	COs No.& Titles	SOs No.	Laboratory Instruction (LI)	Classroom Instruction(CI)	Self Learning (SL)
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO-1: Define management and able to understand the management school thought	SO1.1 SO1.2 SO1.3 SO1.4 SO1.5	00	Unit-1.0 Introduction of Organization and corporate strategy 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18, 19,20,21,22,23,24,25,26,27,28,29,30,31,32	04
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO 2 : Explain the overview of planning in management.	SO2.1 SO2.2 SO2.3 SO2.4 SO2.5	06	Unit-2 Overview of Planning 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18, 19,20,21,22,23,24,	04
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO3 : Illustrate the concept of organizing, staffing, directing and controlling	SO3.1 SO3.2 SO3.3 SO3.4 SO3.5	06	Unit-3 : Organizing and Staffing, Directing and Controlling 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18, 19,20,21,22,23,24,25,26,27,28,29,30	04
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO 4: Analyze the significance of organizational behavior.	SO4.1 SO4.2 SO4.3 SO4.4 SO4.5	03	Unit-4: Importance of organizational Behavior and Emotional Intelligence 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18, 19,20,21,22,23	03
PO: 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO 5: Evaluate the organizational power and politics	SO5.1 SO5.2 SO5.3 SO5.4 SO5.5	06	Unit 5: Organizational Power and Politics. 1,2,3,4,5,6,7,8,9,10,11	04

BPT THIRD YEAR

YEAR IIIrd

Course Code: 122BPT31

Course Title: Neurology including Psychiatry and Neurosurgery

Pre- requisite: Student should have basic knowledge of neurology and related disease with their treatment

Rationale: The students studying principles and practice of management will be able to understand the application of principles of management which makes the manager more realistic, thoughtful, justifiable and free from personal bias. The decisions taken on the basis of principles of management are subject to evaluation and objective assessment.

Course Outcomes:

Course Code:	122BPT31
Course Title:	Neurology including Psychiatry and Neurosurgery
Course Outcomes:	
122BPT31.1	Find how to extend the nervous system & brief description of headache, migraine, raised ICP
122BPT31.2	Apply concepts the type of convulsive disorder, development and degenerative syndrome
122BPT31.3	Learn the basic concepts of the Psychiatry
122BPT31.4	Recall the basic concepts of the neurosurgery
122BPT31.5	Relate the basic idea of the introduction of spinal cord, peripheral nerve and infection of brain and spinal cord

Scheme of Studies

CODE	Course Code	Course Title	Scheme of studies (Hours/Week)				Total Study Hours (CI+LI+SW+SL)
			CI	LI	SW	SL	
PCC	122BPT31	Neurology including Psychiatry and Neurosurgery	6	0	1	1	8

- Legend:** **CI:** Classroom Instruction (Includes different instructional strategies i.e. Lecture (L) and Tutorial (T) and others),
LI: Laboratory Instruction (Includes Practical performances in laboratory workshop, field or other locations using different instructional strategies)
SW: Sessional Work (includes assignment, seminar, mini project etc.),
SL: Self Learning,

Note: SW & SL has to be planned and performed under the continuous guidance and feedback of teacher to ensure outcome of Learning.

Scheme of Examination

Theory

CODE	Course Code	Course Title	Internal Assessment		University Examination			Total
			Theory	Practical	Theory	Viva	Practical	
PCC	122BPT31	Neurology including Psychiatry and Neurosurgery	20	--	80	--	--	100

Course-Curriculum Detailing:

This course syllabus illustrates the expected learning achievements, both at the course and session levels, which students are anticipated to accomplish through various modes of instruction including Classroom Instruction (CI), Laboratory Instruction (LI), Sessional Work (SW), and Self Learning (SL). As the course progresses, students should showcase their mastery of Session Outcomes (SOs), culminating in the overall achievement of Course Outcomes (COs) upon the course's conclusion.

122BPT31.1: Find how to extend the nervous system & brief description of headache, migraine, raised ICP Hours

Item	Hrs
CI	20
LI	00
SW	03
SL	02
Total	25

Session Out comes(SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO1.1 To Understand Nervous system</p> <p>SO1.2 To learn about Clinical assessment of a neurological patient</p> <p>SO1.3 To learn about Investigation</p> <p>SO1.4 Application of General manifestations of nervous system disease & management</p> <p>SO1.5 Analysis of Headache, migraine, raised intra-cranial pressure, cranialNerves</p>		<p>Unit-1 Nervous system, Brief Description of Headache, migraine, raised intra-cranial pressure, Cranial Nerves, Inflammatory conditions, Disorders of cerebral circulation, Demyelinating diseases, Movement disorders/ Extra pyramidal syndromes</p> <p>1.1 Nervous system: Disorders of Neurological functions in the light of Anatomy and Physiology (Brief description only) –</p> <p>1.2 A. Basic Neurophysiology, functional anatomy,</p> <p>1.3 Reflexes:- Physiology of reflexes, genesis of spasticity,</p> <p>1.4 Rigidity</p> <p>1.5 postural reflex</p> <p>1.6 Bladder and Bowel Control:- Innervations, anatomy, physiology, pathology</p> <p>1.7 Clinical assessment of a neurological patient: Principles of clinical examination</p> <p>1.8 diagnosis, higher mental function, assessment of brain and spinal cord function, Differential diagnosis and Prognosis of Neurological disorders,</p> <p>1.9 history taking/over view from perspective of clinical examination.</p> <p>1.10 Investigation Principles, methods, views,</p> <p>1.11 type of following investigative procedure- Skull XRay,</p> <p>1.12 CT, MRI,</p>	<p>1. Reflexes:- Physiology of reflexes, genesis of spasticity, rigidity, postural reflex</p> <p>2. Bladder and Bowel Control:- Innervations, anatomy, physiology, pathology</p> <p>3. XRay, CT, MRI, Evoked potential, lumbar puncture, CSF examination, EMG, NCV.</p>

		<p>1.13 Evoked potential, lumbar puncture, CSF examination, EMG, NCV.</p> <p>1.14 General manifestations of nervous system disease & management</p> <p>1.15 Brief Description of Headache, migraine, raised intra-cranial pressure</p> <p>1.16 Cranial Nerves and special senses with major emphasis on V, VII, X, XI, & XII</p> <p>1.17 Inflammatory conditions (brief description) – meningitis (bacterial, tubercular), viral encephalitis, Poliomyelitis, syphilis, rabies</p> <p>1.18 Disorders of cerebral circulation – A. Stroke:- Etiopathology, clinical features pertaining to artery involved, types, management B. Hypertensive encephalopathy</p> <p>1.19 Demyelinating diseases (brief description) - acute disseminated encephalomyelitis, multiple sclerosis</p> <p>1.20 Movement disorders/ Extra pyramidal syndromes</p> <p>1.21 Parkinson's disease, Chorea, Athetosis, Dystonia, Hemiballismus, Spasmodic Torticollis, Tremors and Writer's Cramps, Cerebellar Ataxia, Friedreich's Ataxia</p>	
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SW-1 Suggested Sectional Work(SW):

Assignments:

Investigation : Principles, methods, views, type of following investigative procedure- Skull XRay, CT, MRI, Evoked potential, lumbar puncture,

Mini Project:

General manifestations of nervous system disease & management

Other Activities (Specify):

Cranial Nerves and special senses with major emphasis on V, VII, X, XI, & XII

122BPT31.2: Apply concepts the type of convulsive disorder, development and degenerative syndrome

Hours

Item	Hrs
CI	20
LI	00
SW	03
SL	02
Total	25

Session Out comes(SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO1.1 To Understand Nervous system</p> <p>SO1.2 To learn about Clinical assessment of a neurological patient</p> <p>SO1.3 To learn about Investigation</p> <p>SO1.4 Application of General manifestations of nervous system disease & management</p> <p>SO1.5 Analysis of Headache, migraine, raised intra-cranial pressure, cranialNerves</p>		<p>Unit-2 Convulsive disorders, Developmental and degenerative syndromes, Disorders of Spinal cord and Cauda Equina, Metabolic and intoxication disorders (brief description), Peripheral nerve disorders, Muscle disorders, Autonomic nervous system, Pediatric neurology, Motor Neuron disease, Multiple Sclerosis, Dementia</p> <p>2.1 Convulsive disorders (brief description) - epilepsy (GM, PM, Psychomotor), tetany</p> <p>2.2 Developmental and degenerative syndromes – cerebral palsy</p> <p>2.3 kernicterus</p> <p>2.4 hereditary ataxias, motor neuron disease, Peroneal muscular atrophy</p> <p>Disorders of Spinal cord and Cauda Equina- spinal cord injury</p> <p>2.5 paraplegia, quadriplegia, spina- bifida, transverse myelitis,</p> <p>2 . 6 Non-compressive myelopathies , Neurogenic bladder and bowel.</p> <p>2.7 Metabolic and intoxication disorders (brief description) –</p> <p>2.8 Alcoholism, Drug addiction, heavy metals poisoning (lead, mercury, copper),</p> <p>2.9 Organo- phosphorous poisoning, electric shock, tetanus, botulism</p> <p>2.10 Peripheral nerve disorders – traumatic/ compression or entrapment neuropathy, polyneuritis, AIDP, CIDP, GB syndrome, diabetic polyneuropathy and spinal radiculopathies.</p> <p>2.11 Special emphasis on brachial and lumbo-sacral plexuses and major nerves – radial, ulnar, median, femoral, and sciatic nerve.</p> <p>2.12 Muscle disorders – Dystrophies (classification clinical features. Beckers muscular dystrophy, duchennes muscular dystrophy),</p> <p>2.13 Progressive muscular dystrophy, polymyositis, myasthenia gravis, floppy infant syndrome, overview of other</p>	<p>1. Disorders of Spinal cord and Cauda Equina- spinal cord</p> <p>Neurogenic bladder and bowel.</p> <p>2. Muscle disorders – Dystrophies (classification clinical features. Beckers muscular dystrophy, duchennes muscular dystrophy), Progressive muscular dystrophy, polymyositis, myasthenia gravis, floppy infant syndrome, over view of other muscle disorders like channelopathies, cramps.</p>

		<p>muscle disorders like channelopathies, cramps.</p> <p>2.14 Autonomic nervous system (brief description)– clinical features of autonomic disorders, autonomic dysreflexia, autonomic nervous system and pain.</p> <p>2.15 Pediatric neurology : Neural development, etiology, pathophysiology, classification, clinical sign and symptoms, investigations,differential diagnosis, medical management,</p> <p>2.16 surgical management and complications of following disorders- Cerebral palsy, hydrocephalus, Arnold Chiari malformation, basilar impression, Klippel- feil syndrome, achondroplasia, cerebral malformations, Autism, Dandy walker syndrome and Down syndrome.</p> <p>2.17 Motor Neuron disease: Etiology, pathophysiology, classification, clinical sign and</p> <p>2.18 symptoms, investigations, differential diagnosis, medical management and complications of following disorders.</p> <p>2.19 Amyotrophic Lateral Sclerosis, Spinal muscular atrophy, Bulbar palsy, neuromyotonia . Multiple Sclerosis: Etiology, pathophysiology, classification, clinical sign and symptoms, investigations,differential diagnosis,</p> <p>2.20 Dementia</p>	
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SW-1 Suggested Sectional Work(SW)

Assignments:

,Multiple Sclerosis:.

Mini Project:

Motor Neuron disease: disorders. Amyotrophic Lateral Sclerosis,

Other Activities (Specify):

Pediatric neurology

122BPT31.3: Learn the basic concepts of the Psychiatry

Item	Hrs
CI	20
LI	00
SW	03
SL	02
Total	25

Session Out comes(SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO3.1 To Understand Principles of psychiatric examination</p> <p>SO3.2 To learn about Modalities of psychiatric treatment</p> <p>SO3.3 To learn about Psychiatric illness and physical therapy</p> <p>SO3.4 Application of Anxiety neurosis, Depression, Obsessive compulsive neurosis, Psychosis, Maniacdepressive psychosis, Drug induced psychosis, Post-traumatic stress disorder, Psychosomatic reactions:</p> <p>SO3.5 Analysis of Child psychiatry, Geriatric Psychiatry, Mental deficiency</p>		<p>Unit-3 PSYCHIATRY</p> <p>3.1 Principles of psychiatric examination Modalities of psychiatric treatment Psychiatric illness and physical therapy link Briefdescription of Etiopathogenesis, manifestations, and management of psychiatric illnesses</p> <p>3.2Anxietyneurosis,Depression, Obsessivecompulsive neurosis</p> <p>3.3Psychosis,Maniacdepressive psychosis, Drug induced psychosis, Post-traumatic stress disorder,</p> <p>3.4Psychosomatic reactions: Stress and Health; theories of Stress – Illness Link,</p> <p>3.5Organic brain syndrome, ,</p> <p>3.6Drug dependence and alcoholism,</p> <p>3.7Somatoform and Dissociate Disorders –</p> <p>3.8conversion reactions, Somatization, Dissociate</p> <p>3.9Amnesia, and Dissociate Fugue, Multiple</p> <p>3.10Personality & Depersonalization disorder</p> <p>3.11Child psychiatry: Brief descriptions of manifestations, and</p> <p>3.12management of childhood disorders</p> <p>3.13attention deficit syndrome,</p> <p>3 . 1 4 behavioral disorders</p> <p>3.15 Geriatric Psychiatry</p> <p>3.16Mental deficiency- (descriptive) :</p> <p>3 . 1 7 Mentalretardation,</p> <p>3.18Learning disabilities,</p> <p>3.19Autistic behavior</p> <p>3.20 Dementia</p>	<p>1. Anxiety neurosis, Depression, Obsessive compulsive neurosis, Psychosis, Maniacdepressive psychosis, Drug induced psychosis, Post-traumatic stress disorder, Psychosomatic reactions</p>

SW-1 Suggested Sectional Work(SW):

Assignments:

Mental deficiency-

Mini Project:

Child psychiatry: - attention deficit syndrome, and behavioral disorders.

Other Activities (Specify):

Psychiatric illness and physical therapy

122BPT31.4: Recall the basic concepts of the neurosurgery

Item	Hrs
CI	20
LI	00
SW	03
SL	02
Total	25

Session Out comes(SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO4.1 To Understand Principles of neurosurgery</p> <p>SO4.2 To learn about Congenital and Childhood disorders</p> <p>SO4.3 To learn about Trauma, Intra-cranial disorders</p> <p>SO4.4 Application of Head Injury: Etiology, pathophysiology, classification, clinical sign and symptoms, investigations, medical management, Surgical management and complications</p> <p>SO4.5 Analysis of Brain tumors and Spinal tumors</p>	<p>1. Assessment of Cranial nerves.</p> <p>2. Assessment of Motor system.</p> <p>3. Assessment of Sensory function, Touch, Pain and Position.</p> <p>4. Assessment of Tone-Spasticity, Rigidity and Hypotonia.</p>	<p>Unit-4 NEUROSURGERY</p> <p>4.1 Neurophysiology: Reviews in brief the neurophysiologic basis of tone and Disorders of tone and Posture, Bladder control,</p> <p>4.2 Muscle conduction, Movement and Pain.</p> <p>4.3 Clinical Features and Management: Briefly outline the clinical features and management of the following neurological disorders. Congenital</p> <p>4.4 Childhood disorders a) Hydrocephalus. b) Spinal Bifida.</p> <p>4.5 Trauma - Broad localization, first aid and management .</p> <p>4.6 Head Injury: Etiology, pathophysiology, classification, clinical sign and symptoms,</p> <p>4.7 Head Injury: Etiology, pathophysiology, classification, clinical sign and symptoms</p> <p>4.8 investigations, medical management, Surgical management and complications.</p> <p>4.9 Intra-cranial disorders – clinical features, complications</p> <p>4.10 management of brain abscess, space occupying lesion, hydrocephalus,</p> <p>4.11 vascular malformation</p>	<p>1. Congenital and Childhood disorders</p> <p>a) Hydrocephalus.</p> <p>b) Spinal Bifida.</p> <p>2. Vertebral column injuries – classification, clinical</p>

		<p>4.12 Brain tumors</p> <p>4.13 Spinal tumors: , classification, clinical sign and symptoms,</p> <p>4.14 Spinal tumors: , classification, clinical sign and symptoms</p> <p>4.15 investigations, differential diagnosis, medical and surgical management.</p> <p>4.16 Intracranial tumours: Broad Classification,</p> <p>4.17 Signs and Symptoms.</p> <p>4.18 Vertebral column injuries – classification, clinical features</p> <p>4.19 Vertebral column injuries – classification, clinical features</p> <p>4.20 complications & management.</p>	
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SW-1 Suggested Sectional Work

(SW): Assignments:

Intracranial tumours: Broad Classification, Signs and Symptoms.

Mini Project:

Trauma - Broad localization, first aid and management.

Other Activities (Specify): Brain tumors and Spinal tumors.

122BPT31.5: Relate the basic idea of the introduction of spinal cord, peripheral nerve and infection of brain and spinal cord

Hours

Item	AppXHrs
CI	20
LI	00
SW	03
SL	02
Total	25

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO5.1 To Understand Principles SpinalCord injury and Diseases</p> <p>SO5.2 To learn about Peripheral NerveDisorders</p> <p>SO5.3 To learn about Pre-operative assessment, Indications and Contraindications for Neurosurgery.</p> <p>SO5.4 Application of Head Injury: Etiology, pathophysiology, classification, clinical sign and symptoms, investigations, medical management, Surgical management and complications</p> <p>SO5.5 Analysis of Brain tumors andSpinal tumors</p>	<p>1. Assessment of Cerebral function.</p> <p>2. Assessment of Higher cortical function - Apraxia.</p> <p>3. Assessment of Gait Abnormalities.</p>	<p>Unit-5 INTRODUCTION OF SPINAL CORD, PERIPHERAL NERVE AND INFECTIONS OF BRAIN AND SPINAL CORD AND MANAGEMENT OF PAIN</p> <p>5.1 Spinal Cord injury and Diseases of the Spinal Cord:</p> <p>5.2Craniovertebral junction anomalies. b) Syringomyelia.</p> <p>5.3Cervical and lumbar disc disease</p> <p>5.4Tumours. Spinalarachnoiditis.</p> <p>5.5 Peripheral Nerve Disorders: a) Peripheral nerve injuries: Localization and Management</p> <p>5.6 Entrapment Neuropathies.Pre-operative assessment,</p> <p>5.7 Indications and Contraindications for Neurosurgery.</p> <p>5.8 Introduction and brief description of indication and complications of following neurosurgeries: Craniotomies,</p> <p>5.9 cranioplasty,</p> <p>5.10 stereotactic surgery,</p> <p>5.11 deep brain stimulation,</p> <p>5.12 burr hole, shunting, laminectomy, hemilamectomy, rhizotomy,</p> <p>5.13 microvascular decompression surgery, Endarterectomy,</p> <p>5.14embolization, pituitary surgery, ablative surgery-</p> <p>5.15Thalamotomy and pallidotomy, Neurolo implantation.</p> <p>5.16Infections of brain and Spinal Cord: pathophysiology, classification,</p>	<p>1. Management of Pain, Electrical Stimulation of Brain and Spinal cord.</p> <p>2. Infections of brain andSpinal Cord</p>

		<p>5.17clinical sign and symptoms, investigations, differential diagnosis, medical management,</p> <p>5.18surgical management and complications.</p> <p>5.19Management of Pain, 5.20Electrical Stimulation of Brain and Spinal cord.</p>	
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SW-1 Suggested Sectional Work (SW):

Assignments:

Management of Pain, Electrical Stimulation of Brain and Spinal cord.

Mini Project:

Craniotomies, cranioplasty,.

Other Activities (Specify):

Pre-operative assessment, Indications and Contraindications for Neurosurgery.

Brief of Hours suggested for the Course Outcome

Course Outcomes	Class Lecture (CI)	Sessional Work (SW)	Self-Learning (SI)	Total hour (CI+SW+SI)
122BPT31.1: Define the nervous system & brief description of headache, migraine, raised ICP	20	03	02	25
122BPT31.2: Explain the overview of the type of convulsive disorder, development and degenerative syndrome.	20	03	02	25
122BPT31.3: Illustrate the basic concepts of the Psychiatry	20	03	02	25
122BPT31.4: Analyze the significance of concepts of the neurosurgery.	20	03	02	25
122BPT31.5: Evaluate introduction of spinal cord, peripheral nerve and infection of brain and spinal cord	20	03	02	25
Total Hours	100	15	10	125

**Suggestion for End Semester Assessment
Suggested Specification Table (For ESA)**

CO	Unit Titles	Marks Distribution				Total Marks
		Ap	An	Ev	Cr	
CO-1	The Nervous System & Brief Description Of Headache, Migraine, Raised ICP					
CO-2	The Type Of Convulsive Disorder, Development And Degenerative Syndrome.					
CO-3	The Basic Concepts Of The Psychiatry					
CO-4	The Concepts of The Neurosurgery.					
CO-5	Introduction Of Spinal Cord, Peripheral Nerve And Infection Of Brain And Spinal Cord.					
Total						20

Legend: Ap: Apply, An: Analyze, Ev: Evaluate Cr: Create

Note. Detailed Assessment rubric need to be prepared by the course wise teachers for above tasks.
Teachers can also design different tasks as per requirement, for end semester assessment.

Suggested Instructional/Implementation Strategies:

1. Improved Lecture
2. Tutorial
3. Case Method
4. Group Discussion
5. Role Play
6. Visit to hospitals
7. Demonstration

Suggested Learning Resources:

(a) Books:

S. No.	Title	Author	Publisher	Edition & Year
1	Brain and Bannister Clinical Neurology	Bannister, R.	Oxford university press, oxford	2002
2	Symptoms and Signs in Clinical Medicine	Chamberlain, E.N.	John Wright, Bristol	1974
3	Neurological Examination	Haerer,	A.F. Lippincott, Philedelphia	1999
4	Text Book Of psychiatry	8 Ahuja, Neeraj	9 Short Jaypee, New Delhi	1999
5	Lecture note provided by Faculty of Medical Science, AKS University, Satna.			

Curriculum Development Team

7. Professor (Dr.) GP Richariya, Dean, Faculty of Medical Science, AKS University
8. Dr. Deajeet dutta Principal Department of paramedical science AKS University ,
9. Dr Anil kumar mishra Head of the Department, Department of paramedical science
10. Dr. Brajesh kumar, Assistant Professor , Department of paramedical science
11. Dr. Poonam Singhariya, Assistant Professor , Department of paramedical science
12. Dr. R.M. Sharma , Professor , Department of paramedical science

CO, POs and PSOs Mapping
Program title: B.P.T (Bachelor of physiotherapy)
Course code: 122BPT31

Course title: Neurology including Psychiatry & Neurosurgery

Course outcomes	Program outcomes												Program specific outcome			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO2	PSO3	PSO4
	Disciplinary knowledge	Psychomotor Skills	Communication skills	Critical thinking	Problem Solving	Analytical reasoning	Research – Related Skills	Co-operation /Team Work	Socio-cultural and multicultural competency	Awareness of moral, ethical and legal issues	Leadership qualities	Ongoing Learning:	Ability to Patient professional care .	Ability to Demonstrate clinical decision d patient care	Ability to counsel the patients, family,colleagues and students aspects of physiotherapy treatment.	Ability to Work effectively in various professional collaborative places like hospital.
CO1: Find how to extend the nervous system & brief description of headache, migraine, raised ICP	2	2	1	1	2	2	2	1	2	1	2	1	1	2	2	2
CO2: Apply concepts the type of convulsive disorder, development and degenerative syndrome	2	2	1	1	2	2	2	1	2	1	2	1	1	2	2	2
CO3: Learn the basic concepts of the Psychiatry	2	2	1	1	2	2	2	1	2	1	2	1	1	2	2	2
CO4: Recall the basic concepts of the neurosurgery	3	2	2	2	3	2	3	2	2	1	2	3	1	3	3	2
CO5 Relate the basic idea of the introduction of spinal cord, peripheral nerve and infection of brain and spinal cord	3	2	2	2	3	2	3	2	2	1	2	3	1	3	3	2

Legends: 1- Low, 2- Medium, 3- High

Course Curriculum Map:

POs & PSOs No.	COs No.& Titles	SOs No.	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO-1: : Define the nervous system & brief description of headache, migraine, raised ICP	SO1.1 SO1.2 SO1.3 SO1.4 SO1.5	02	Unit-1.0 The Nervous System & Brief Description Of Headache, Migraine, Raised ICP 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,15,17,18,19,20	02
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO 2 : Explain the overview of the type of convulsive disorder, development and degenerative syndrome .	SO2.1 SO2.2 SO2.3 SO2.4 SO2.5	02	Unit-2 The Type Of Convulsive Disorder, Development And Degenerative Syndrome 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,15,17,18,19,20	02
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO3 Illustrate the basic concepts of the Psychiatry	SO3.1 SO3.2 SO3.3 SO3.4 SO3.5	02	Unit-3 : The Basic Concepts Of The Psychiatry 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,15,17,18,19,20	02
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO 4: Analyze the significance of concepts of the neurosurgery.	SO4.1 SO4.2 SO4.3 SO4.4 SO4.5	02	Unit-4: The Concepts Of The Neurosurgery e 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,15,17,18,19,20	02
PO: 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO 5: Evaluate introduction of spinal cord, peripheral nerve and infection of brain and spinal cord	SO5.1 SO5.2 SO5.3 SO5.4 SO5.5	02	Unit 5: Introduction Of Spinal Cord, Peripheral Nerve And Infection Of Brain And Spinal Cord. 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,15,17,18,19,20	02

YEAR III

Course Code: 122BPT32

Course Title: Orthopedics

Pre- requisite: Student should have basic knowledge of orthopedic and related disease with their treatment .

Rationale: The students studying principles and practice of Prevention and treatment of musculoskeletal disorders, Restoration of function and mobility, Relief from pain and discomfort, Improvement of physical function and performance, Multidisciplinary approach.

Course Outcomes:

Course Code:	122BPT32
Course Title:	Orthopedics
Course Outcomes:	
122BPT32.1	Find how to extend the introduction of orthopedics.
122BPT32.2	Apply concepts regarding the congenital developmental neuromuscular and spinal disorder
122BPT32.3	Learn the basic concepts of the neuro vascular disease and nerve injuries
122BPT32.4	Recall the basic concepts of the lower limb, clinical evaluation and conservative management
122BPT32.5	Relate the basic idea of the inflammatory and degenerative condition, amputation.

Scheme of Studies

CODE	Course Code	Course Title	Scheme of studies (Hours/Week)				
			CI	LI	SW	SL	Total Study Hours (CI+LI+SW+SL)
PCC	122BPT32	Orthopedics	6	0	1	1	8

- Legend:**
- CI:** Classroom Instruction (Includes different instructional strategies i.e. Lecture (L) and Tutorial (T) and others),
 - LI:** Laboratory Instruction (Includes Practical performances in laboratory workshop, field or other locations using different instructional strategies)
 - SW:** Sessional Work (includes assignment, seminar, mini project etc.),
 - SL:** Self Learning,
 - C:** Credits.

Note: SW & SL has to be planned and performed under the continuous guidance and feedback of teacher to ensure outcome of Learning.

Scheme of Examination

Theory

CODE	Course Code	Course Title	Internal Assessment		University Examination			Total
			Theory	Practical	Theory	Viva	Practical	
PCC	122BP T32	Orthopedics	20	--	80	--	--	100

Course-CurriculumDetailing:

This course syllabus illustrates the expected learning achievements, both at the course and session levels, which students are anticipated to accomplish through various modes of instruction including Classroom Instruction (CI), Laboratory Instruction (LI), Sessional Work (SW), and Self Learning (SL). As the course progresses, students should showcase their mastery of Session Outcomes (SOs), culminating in the overall achievement of Course Outcomes (COs) upon the course's conclusion.

122BPT 32.1. Find how to extend the introduction of orthopedics.

Hours

Item	Hrs
CI	20
LI	00
SW	04
SL	02
Total	26

Session Out comes (SOs)	Laboratory-Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
SO1.1 Understand the orthopedical terminology SO1.2 learn the basic orthopedical surgery SO1.3 learn about fracture SO1.4 understand the orthopedical treatment outline SO1.5 understand spinal conditions .		UNIT 1. Introduction to Orthopedics: Terminology, types of common etiology, clinical examination, Common investigation, management. 1.1 Introduction to Orthopedics: Terminology, 1.2 types of common etiology, clinical examination, Common investigation, Outline of management – Operative & Non- Operative. 1.3 Fractures and Dislocations: 1.4 Briefly mention Types of fracture and dislocations, symptoms and signs of above injuries. 1.5 Principles of management and Complications, 1.6 Fracture healing (Normal & pathological) 1.7 Calcium-phosphorus metabolism 1.8 normal and pathological states 1.9 Prevention 1.10 treatment of common	1. Learn the key points about fracture 2. Learn about complication

		<p>complications</p> <p>1.11 Fracture disease, Volkmans ischaemic contracture</p> <p>1.12 Sudeck's osteo dystrophy,</p> <p>1.13 Myositis ossificans,</p> <p>1.14 Ligament injuries,</p> <p>1.15 Shoulder- hand syndrome etc.</p> <p>1.16 Spinal column: fractures, management</p> <p>1.17 complications of Spinal injuries spinal deformities like Scoliosis,</p> <p>1.18 Kyphosis, and Lordosis etc.</p> <p>1.19 Injuries of upper limb and lower limb,</p> <p>1.20 enumerate major fracture and joint injuries, brief description of principle of management and complications.</p>	
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SW-1 Suggested Sectional Work (SW):

Assignments:

Orthopedic

assessment **Mini**

Project:

Fracture healing

Other Activities

(Specify): Physical

patient assessment

**122BPT 32.2 Apply concepts regarding the congenital developmental neuromuscular and spinal disorder
Hours**

Item	AppXHrs
CI	20
LI	00
SW	04
SL	02
Total	26

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO2.1ToUnderstad Congenital anomalies</p> <p>SO2.2 To learn about Development diseases of skeleton</p> <p>SO2.3 learn and understand the Development diseases of skeleton</p> <p>SO2.4 learn about Spinal deformities</p> <p>SO2.5 understand Bone and Joint infections.</p>		<p>UNIT-2CONGENITAL,DEVELOPMENTAL, NEUROMUSCULAR AND SPINAL DISORDER</p> <p>2.1 Congenital anomalies and other deformities:</p> <p>2.2 Brief descriptions of following congenital conditions along with the outline of treatment:</p> <p>2.3 Congenital Hip Displasia,</p> <p>2.4 Congenital Talipes Equinovarus / Calcaneovalgus, Arthrogryposis</p> <p>2.5 , Multiplex Congenita, Congenital Torticollis,</p> <p>2.6 Scoliosis, Acromelia,</p> <p>2.7 phocomelia, Amelia, Spina Bifida: all types, clinical presentation, sequel & management</p> <p>2.8 Development diseases of skeleton: (Brief description only)</p> <p>2.9 Osteogenesis imperfecta, heterotopic ossification, Osteochondritis, Perthes‘ disease.</p> <p>2.10 Development diseases of skeleton:</p> <p>2.11 Volkmann‘ s Ischaemic contracture, obstetrical paralysis, and peroneal muscular atrophy,</p> <p>2.12 Poliomyelitis : common deformities due to PPRP and their orthopaedic aspects and management.</p> <p>2.13 Spinal deformities: clinical features, diagnosis & Conservative management of Scoliosis,</p> <p>2.14 Kyphosis, and traumatic deformities</p> <p>2.15 Bone and Joint infections: Etiology, clinical feature, management and complications</p> <p>2.16 Septic arthritis,</p> <p>2.17 Bacterial infections ,Osteomyelitis,</p> <p>2.18 Tuberculosis</p>	1. Congenital Torticollis

		2.19 leprosy, 2.20 Pott's paraplegia	
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SW-1 Suggested Sectional Work (SW):

Assignments:

Poliomyelitis

Mini

Project:

Leprosy.

Other Activities

(Specify): Model

presentation OF CTEV

122BPT 32.3: Learn the basic concepts of the neuro vascular disease and nerve injuries

Hours

Item	AppXHrs
CI	20
LI	00
SW	04
SL	02
Total	26

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO3.1 To Understand Neuro-vascular Diseases</p> <p>SO3.2 To learn about Arthritis & Rheumatic Diseases</p> <p>SO3.3 To learn about Sprain and Strains</p> <p>SO3.4 Understand about Bony & Soft tissue injuries</p> <p>SO3.5 description about Upper Limbs injuries</p>		<p>Unit-3 Neuro-vascular Diseases – Nerve injuries (major nerves), Plexus injuries, Arthritis & Rheumatic Diseases, Sprain and Strains, Bony & Soft tissue injuries: Injury & repair, Upper Limbs: Clinical presentation, evaluation & conservative management</p> <p>3.1 Neuro-vascular Diseases</p> <p>3.2 (Brief Description): orthopaedic aspects and treatment of</p> <p>3.3 Nerve injuries (major nerves), Plexus injuries</p> <p>3.4 Arthritis</p> <p>3.5 Rheumatic Diseases: Outline of Pathology</p> <p>3.6 Clinical features, evaluation & conservative management of various categories of arthritis:- Rheumatoid arthritis,</p> <p>3.7 Juvenile Ch. Arthritis,</p> <p>3.8 Reiter’s disease,</p> <p>3.9 Polymyalgia rheumatica,</p> <p>3.10 Gout,</p> <p>3.11 osteoarthritis,</p> <p>3.12 Ankylosing spodylitis,</p> <p>3.13 Neuropathic- joints,</p> <p>3.14 haemophilic arthropathy,</p> <p>3.15 Avascular necrosis .</p> <p>3.16 Sprain and Strains: Common sites of sprains</p> <p>3.17 muscle strains, their clinical manifestations and treatment.</p> <p>3.18 Bony & Soft tissue injuries: Injury & repair, Clinical presentation, evaluation</p> <p>3.19 general principles of rehabilitation</p> <p>3.20 Upper Limbs: Clinical presentation, evaluation & conservative management</p>	Arthritis & Rheumatic Diseases

SW-1 Suggested Sectional

Work(SW): Assignments:

Assessment of osteoarthritis

Mini Project:

SD curve

Other Activities (Specify):

poster presentation on rheumatoid arthritis

122BPT32.4: Recall the basic concepts of the lower limb, clinical evaluation and conservative management

hours

Item	AppXHrs
CI	20
LI	00
SW	04
SL	02
Total	26

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO4.1 To Learn about lower limb conditions</p> <p>SO4.2 To learn about Spine: clinical presentation, evaluation and conservative management</p> <p>SO4.3 To understand about arthritis and soft tissue conditions</p> <p>SO4.4 Application of Clinical presentation, evaluation and conservative management of Arthritic conditions, soft tissue injuries</p> <p>SO4.5 Analysis of patients treatment and conditions</p>		<p>Unit 4 Lower Limb: Clinical presentation, evaluation and conservative management of Arthritic conditions, soft tissue injuries Spine: clinical presentation, evaluation and conservative management</p> <p>4.1 Arthritic conditions, 4.2 soft tissue injuries 4.3 sprains 4.5 strains, 4.6 achillis tendonitis, 4.7 bursitis, 4.8 Painful heel conditions 4.9 Tendinitis , 4.10 plantar fascitis, 4.11 deformities, 4.12 reflex sympathetic dystrophy, 4.13 neuropathic Joints, 4.14 common fractures 4.15 dislocations 4.16 Spine: clinical presentation, evaluation and conservative management of – 4.17 Low backache, 4.18 disc prolapse, cord compression, spondylosis, 4.19 Ankylosing spondylosis, Spondylyolsthesis 4.20 Spinal Fractures</p>	<p>1. Lower Limb: Clinical presentation</p> <p>2. Spine: clinical presentation</p>

SW-1 Suggested Sectional Work

(SW): Assignments:

ARTHRITIS

Mini Project:

LOW BACK ACHE

Other Activities (Specify):

Poster on PIVD

122BPT32.5: Relate the basic idea of the inflammatory and degenerative condition, amputation.

hours

Item	Hrs
CI	20
LI	00
SW	04
SL	02
Total	26

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO5.1 To learn about Inflammatory and degenerative conditions,</p> <p>SO5.2 To learn about</p> <p>SO5.3. To learn understand process of Principles of operative Managements</p> <p>SO5.4 Applicati on of Managements</p> <p>SO5.5 Analysis of patients treatment and conditions</p>		<p>Unit-5: Inflammatory and degenerative conditions, Amputations, Principles of operative Managements, Bone and Joint Tumors</p> <p>5.1 Inflammatory and degenerative conditions: Causes, clinical features, complications,</p> <p>5.2 deformities, radiological features, management –</p> <p>5.3 conservative and surgical management for the following conditions:</p> <p>5.4 Osteoarthritis, rheumatoid arthritis,</p> <p>5.5 ankylosing spondylitis,</p> <p>5.6 Gouty arthritis,</p> <p>5.7 Psoriatic arthritis, hemophilic arthritis, 5.8 Charcot’s joints.</p> <p>5.9 Amputations - Justification, outline of surgical approaches, incisions, procedures, Classification, indications, contraindications, complications , pre-operative, operative and postoperative management.</p> <p>5.10. Principles of operative Managements : Orthopedic surgeries, Indications, classification, types, principle of management of the following surgeries:</p> <p>5.11 Arthrodesis,</p> <p>5.12 Arthroplasty(partial and total replacement),</p> <p>5.13 Osteotomy, external fixators,</p> <p>5.14 Spinal strabilization surgeries,</p> <p>5.15 Tendon operations, Arthroscopy, total</p> <p>5.16 joint replacements,</p> <p>5.17 limb re-attachments.</p> <p>5.18 . Bone and Joint Tumors: Classification, clinical features and management of</p> <p>5.19 Osteoma, Osteosarcoma, Osteoclastoma,</p> <p>5.20 Ewings tumor, Multiple myeloma and Secondaries.</p>	<p>1. Read about muscle joint</p> <p>2. Operative management</p>

SW-1 Suggested Sectional Work

(SW): Assignments: tumor

Mini Project:

Degenerative condition

Other Activities (Specify):

Poster presentation on gouty arthritis

Brief of Hours suggested for the Course Outcome

Course Outcomes	Class Lecture (CI)	Sessional Work (SW)	Self-Learning (SI)	Total hour (CI+SW+SI)
122BPT32.1: Define the introduction of orthopedics .	20	4	2	26
122BPT32.2: Explain the overview of the congenital developmental neuromuscular and spinal disorder.	20	4	2	26
122BPT32.3: Illustrate the concept of the neurovascular disease and nerve injuries	20	4	2	26
122BPT32.4: Analyze the significance of the lower limb, clinical evaluation and conservative management .	20	4	2	26
122BPT32.5: Evaluate the the inflammatory and degenerative condition , amputation	20	4	2	26
Total Hours	100	20	10	130

Suggestion for End Semester Assessment

Suggested Specification Table (For ESA)

CO	Unit Titles	Marks Distribution				Total Marks
		Ap	An	Ev	Cr	
CO-1	Introduction Of Orthopedics.					
CO-2	Congenital Developmental Neuromuscular And Spinal Disorder					
CO-3	The Neuro Vascular Disease And Nerve Injuries					
CO-4	The Lower Limb, Clinical Evaluation And Conservative Management .					
CO-5	The Inflammatory And Degenerative Condition , Amputation					
Total						20

Legend: **Ap: Apply,** **An: Analyze,** **Ev: Evaluate** **Cr: Create**

Note. Detailed Assessment rubric need to be prepared by the course wise teachers for above tasks. Teachers can also design different tasks as per requirement, for end semester assessment.

Suggested Instructional/Implementation Strategies:

1. Improved Lecture
2. Tutorial
3. Case Method
4. Group Discussion
5. Role Play
6. Visit to hospitals
7. Demonstration

Suggested Learning Resources:

(a) **Books:**

S. No.	Title	Author	Publisher	Edition & Year
1	Outline of fracture	Adams	Pearson Education	2009
2	Orthopedics and Traumatology by	Orthopedics and Traumatology by Natarajan	Cengage Learning, India	2009
3	Essential Of Orthopedics and Applied Physiotherapy	Joshi, J. and Kotwal, P., New Delhi	Cengage Learning, India	2004
4	Orthopedics: principles and their application	Terke, Samuel	Lippencott, New York	2006
5	Lecture note provided by Faculty of Medical science, AKS University, Satna.			

Curriculum Development Team

1. Professor (Dr.) GP Richariya, Dean, Faculty of Medical Science, AKS University
2. Dr. Debjcet dutta Principal Department of paramedical science AKS University ,
3. Dr Anil kumar mishra Head of the Department, Department of paramedical science
4. Dr. Brajesh kumar, Assistant Professor , Department of paramedical science
5. Dr. Poonam Singhariya, Assistant Professor , Department of paramedical science
6. Dr. R.M. Sharma , Professor , Department of paramedical science

CO, POs and PSOs Mapping
Program title: B.P.T (Bachelor of physiotherapy)
Course code-122BPT32
Course title: Orthopedics

Course outcomes	Program outcomes												Program specific outcome			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO2	PSO3	PSO4
	Disciplinary knowledge	Psychomotor Skills	Communication skills	Critical thinking	Problem Solving	Analytical reasoning	Research – Related Skills	Co-operation /Team Work	Socio-cultural and multicultural competency	Awareness of moral, ethical and legal issues	Leadership qualities	Ongoing Learning:	Ability to Patient professional care .	Ability to Demonstrate clinical decision and patient care	Ability to counsel the patients, family, colleagues and students aspects of physiotherapy treatment.	Ability to Work effectively in various professional collaborative places like hospital.
CO1 Find how to extend the introduction of orthopedics	3	2	2	2	3	2	3	2	2	1	2	3	1	3	3	2
CO2: Apply concepts regarding the congenital developmental neuromuscular and spinal disorder	3	2	2	2	3	2	3	2	2	1	2	3	1	3	3	2
CO3 Learn the basic concepts of the neurovascular disease and nerve injuries	1	1	2	2	3	2	3	2	2	1	3	2	2	3	3	1
CO4 : Recall the basic concepts of the lower limb, clinical evaluation and conservative management	3	2	2	2	3	2	3	2	2	1	2	3	1	3	3	2
CO5: Relate the basic idea of the inflammatory and degenerative condition , amputation	1	1	2	2	3	2	3	2	2	1	3	2	2	3	3	1

Legends: 1- Low, 2- Medium, 3- High

Course Curriculum Map:

POs & PSOs No.	COs No.& Titles	SOs No.	Laboratory Instruction (LI)	Classroom Instruction(CI)	Self Learning (SL)
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO-1: Define the introduction of orthopedics .	SO1.1 SO1.2 SO1.3 SO1.4 SO1.5	00	Unit-1.0 Introduction Of Orthopedics 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18, 19,20	02
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO 2 : : Explain the overview of the congenital developmental neuromuscular and spinal disorder..	SO2.1 SO2.2 SO2.3 SO2.4 SO2.5	00	Unit-2 Congenital Developmental Neuromuscular And Spinal Disorder 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18, 19,20	02
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO3 : Illustrate the concept of the neuro vascular disease and nerve injuries	SO3.1 SO3.2 SO3.3 SO3.4 SO3.5	00	Unit-3 : The Neuro Vascular Disease And Nerve Injuries 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18, 19,20	02
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO 4: Analyze the significance of the lower limb, clinical evaluation and conservative management ..	SO4.1 SO4.2 SO4.3 SO4.4 SO4.5	00	Unit-4: The Lower Limb, Clinical Evaluation And Conservative Management 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18, 19,20	02
PO: 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO 5: Evaluate the the inflammatory and degenerative condition , amputation	SO5.1 SO5.2 SO5.3 SO5.4 SO5.5	00	Unit 5 The Inflammatory And Degenerative Condition , Amputation. 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17, 18,19,20	02

YEAR III

Course Code: 122BPT33

Course Title: Applied Biomechanics and Kinesiology

Pre- requisite: Student should have basic knowledge of biomechanical principles and movement analysis and Knowledge of kinesiology and exercise science.

Rationale: The students studying principles and practice of Biomechanics helps you comprehend the mechanics of human movement, enabling you to analyze and improve movement patterns, enhance athletic performance, and reduce injury risk., Biomechanics informs the development of effective injury prevention and rehabilitation strategies, allowing you to help individuals recover from injuries and maintain optimal physical function.

Course Outcomes:

Course Code:	122BPT33
Course Title:	Applied Biomechanics and Kinesiology
Course Outcomes:	
122BPT33.1	Find How To Introduce And Scope Of Regarding Introduction: Definition And Aim Of Biomechanics, Kinematics And Kinetics Gravity
122BPT33.2	Apply Concepts Regarding The Brief Description Of Biomechanics Of Bone,Spine ,And Upper Extrimity
122BPT33.3	Learn The Basic Concepts Of Brief Description Of The Biomechanics Of Lower Extremity, Locomotion, Activities Of Daily Living, Good Posture, Postural Deviations
122BPT33.4	Recall The Basic Concepts Of Joint Structure And Function, Kinesiology And Joint Range Of Motion, Axis And Plane Of Motion
122BPT33.5	Relate The Basic Idea Of Abnormal Posture And Pathological Gait

Scheme of Studies

CODE	Course Code	Course Title	Scheme of studies (Hours/Week)				Total Study Hours (CI+LI+SW+SL)
			CI	LI	SW	SL	
PCC	122BPT33	Applied Biomechanics and Kinesiology	6	0	1	1	8

- Legend:** **CI:** Classroom Instruction (Includes different instructional strategies i.e. Lecture (L) and Tutorial (T) and others),
LI: Laboratory Instruction (Includes Practical performances in laboratory workshop, field or other locations using different instructional strategies)
SW: Sessional Work (includes assignment, seminar, mini project etc.),
SL: Self Learning,

Note: SW & SL has to be planned and performed under the continuous guidance and feedback of teacher to ensure outcome of Learning.

Scheme of Examination

Theory

CODE	Course Code	Course Title	Internal Assessment		University Examination			Total
			Theory	Practical	Theory	Viva	Practical	
PCC	122BP T33	Applied Biomechanics and Kinesiology	20	--	80	--	--	100

Course-CurriculumDetailing:

This course syllabus illustrates the expected learning achievements, both at the course and session levels, which students are anticipated to accomplish through various modes of instruction including Classroom Instruction (CI), Laboratory Instruction (LI), Sessional Work (SW), and Self Learning (SL). As the course progresses, students should showcase their mastery of Session Outcomes (SOs), culminating in the overall achievement of Course Outcomes (COs) upon the course's conclusion

122BPT33.1: Find How To Introduce And Scope Of Regarding Introduction: Definition And Aim Of Biomechanics, Kinematics And Kinetics Gravity Hours

Item	Hrs
CI	20
LI	00
SW	03
SL	02
Total	25

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO1.1 to understand introduction: definition and aim of biomechanics</p> <p>So1.2 to learn about kinematics and kinetics</p> <p>SO1.3 To learn about resolution of forces</p> <p>SO1.4 Application of Torque, Anatomic Pulley and its role in movement</p> <p>SO1.5 Analysis of Gravity:</p>	.	<p>Unit-1 INTRODUCTION: DEFINITION AND AIM OF BIOMECHANICS, KINEMATICS AND KINETICS GRAVITY</p> <p>1.1Introduction of biomechanics</p> <p>1.2 Definition Aim ofBiomechanics,</p> <p>1.3 Scope and Importance of Biomechanics in Physiotherapy and Bioengineering</p> <p>1.4 Kinematics</p> <p>1.5 Kinetics: Definition,</p> <p>1.6Description of motion, Types of motion,</p> <p>1.8Axes and planes.</p> <p>1.9Definition of force,</p> <p>1.10 Statics and Dynamics, Inertia, 1.11Classification of forces,</p> <p>1.12Composition and Resolution of forces: Linear, Concurrent and Parallel force system</p> <p>1.13Muscle force,</p> <p>1.14 Friction force,</p> <p>1.15 Torque,</p> <p>1.16Anatomic Pulley and its role in movement</p> <p>1.17Gravity: Definition,</p> <p>1.18Center of Gravity and Center of Mass, Location of Center of Mass,</p> <p>8Line of Gravity,</p> <p>1.20Stability and Equilibrium, Linear and Angular Equilibrium</p>	<p>1 Kinematics and Kinetics: Definition</p> <p>2. Definition of force, Statics and Dynamics, Inertia, Classification of forces</p> <p>3. An atomic Pulley and its role in movement</p>

SW-1 Suggested Sectional Work (SW):

Assignments:

Stability andEquilibrium, Linear and Angular Equilibrium

Mini Project:

Anatomic Pulley and its role in movement

Other Activities (Specify):

Composition and Resolution of forces: Linear, Concurrent and Parallelforce system

122BPT33.2: Apply Concepts Regarding The Brief Description Of Biomechanics Of Bone, Spine, And Upper Extrimity

Hours

Item	Hrs
CI	20
LI	00
SW	03
SL	02
Total	25

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO2.1 To Understand Nervous system</p> <p>SO2.2 To learn about Clinical assessment of a neurological patient</p> <p>SO2.3 To learn about Investigation</p> <p>SO2.4 Application of General manifestations of nervous system disease & management</p> <p>SO2.5 Analysis of Headache, migraine, raised intra-cranial pressure, cranialNerves</p>		<p>Unit-2 1BIOMECHANICS OF BONE, SPINE, AND UPPER EXTRIMITY</p> <p>2.1 Biomechanics of Bone,</p> <p>2.2 Biomechanics of Bone</p> <p>2.3 Biomechanics of Bone</p> <p>2.4 collagenous tissue</p> <p>2.5 muscle:</p> <p>2.6 Structure,</p> <p>2.7 function</p> <p>2.8 Mechanics in health and in disease, injury,</p> <p>2.9 immobilization,</p> <p>2.10 exercise</p> <p>2.11 overuse</p> <p>2.12 Biomechanics of Spine:</p> <p>2.13 Structure,</p> <p>2.14 Function</p> <p>2.15 Mechanics in health and in disease</p> <p>2.16 Biomechanics of Upper Extremity:</p> <p>2.17Structure,</p> <p>2.18Function</p> <p>2.19Mechanics in health and in disease</p> <p>2.20Mechanics in health and in disease</p>	<p>1. Biomechanics of Bone</p>

SW-1 Suggested Sectional Work

(SW): Assignments:

collagenous tissue and muscle.

Mini Project:

Biomechanics of Spine.

Other Activities (Specify):

Mechanics in health and in disease, injury,

122BPT33.3: Learn The Basic Concepts Of Brief Description Of The Biomechanics Of Lower Extremity, Locomotion, Activities Of Daily Living, Good Posture, Postural Deviations

Hours

Item	Hrs
CI	20
LI	00
SW	03
SL	02
Total	25

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO3.1 To Understand Biomechanics of Lower Extremity:</p> <p>SO3.2 To learn about Biomechanics of Locomotion</p> <p>SO3.3 To learn about Origin of human movements</p> <p>SO3.4 Application of Biomechanics of Activities of Daily Living,</p> <p>SO3.5 Biomechanics of Good Posture</p>		<p>Unit-3 BIOMECHANICS OF LOWEREXTREMITY,LOCOMOTION, ACTIVITIES OF DAILY LIVING, GOOD POSTURE, POSTURAL DEVIATIONS</p> <p>3.1 Biomechanics of Lower Extremity:</p> <p>3.2 Structure,</p> <p>3.3 Function</p> <p>3.4 Mechanics in health and in disease</p> <p>3.5 Biomechanics of Locomotion</p> <p>3.6 Gait Deviations,</p> <p>3.7 Origin of human movements</p> <p>3.8 significance,</p> <p>3.9 Forms of human movements,</p> <p>3.10 their characteristics and factors</p> <p>3.11 affecting them</p> <p>3.12 Biomechanics of Activities of Daily Living,</p> <p>3.13 Work Analysis</p> <p>3.14 Posture: Definition,</p> <p>3.15 Biomechanics of Good Posture,</p> <p>3.15 Biomechanics of postural deviations,</p> <p>3.16 Biomechanics of postural deviations</p> <p>3.17 effect of age,</p> <p>3.18 disease,</p> <p>3.19 occupation</p> <p>3.20 pregnancy on good posture</p>	<p>1. Biomechanics of Lower Extremity,</p> <p>2. Biomechanics of Locomotion</p>

SW-1 Suggested Sectional Work

(SW): Assignments:

Biomechanics of Activities of Daily Living Mini Project:

Biomechanics of Activities of Daily Living. Other Activities

(Specify):

Biomechanics of Good Posture

122BPT33.4: Recall The Basic Concepts Of Joint Structure And Function, Kinesiology And Joint Range Of Motion, Axis And Plane Of Motion

Hours

Item	Hrs
CI	20
LI	00
SW	03
SL	02
Total	25

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO4.1 To Understand Joint structure and function</p> <p>SO4.2 To learn about Kinesiology:</p> <p>SO4.3 To learn about Brief surgical anatomy (structural components, and alignment)</p> <p>SO4.4 Application of Analysis of movement</p> <p>SO4.5 Analysis of Joint range of motion, axis and plane of motion</p>		<p>Unit-4 JOINT STRUCTURE AND FUNCTION, KINESIOLOGY AND JOINT RANGE OF MOTION, AXIS AND PLANE OF MOTION</p> <p>4.1 Joint structure and function</p> <p>4.2 Types of joints</p> <p>4.3 Joint functions</p> <p>4.4 Kinesiology</p> <p>4.5 Kinesiology</p> <p>4.6 Origin of human movement and its significances</p> <p>4.7 Analysis of movement – kinetics</p> <p>4.8 kinematics</p> <p>4.9 Body links and motion parts</p> <p>4.10 General effects of injury and disease on joint functioning</p> <p>4.11 Brief surgical anatomy (structural components, and alignment)</p> <p>4.12 Joint range of motion,</p> <p>4.13 axis</p> <p>4.14 plane of motion</p> <p>4.15 Joint movements,</p> <p>4.16 mobility</p> <p>4.17 stability,</p> <p>4.18 restrictions and limitations</p> <p>4.19 end feels</p> <p>4.20 Abnormal deviations in joints in disease and injury of the following joint complexes</p>	<p>1. Analysis of movement – kinetics and kinematics</p> <p>2. Joint movements, mobility and stability, restrictions and limitations, end feels</p>

SW-1 Suggested Sectional Work

(SW): Assignments:

Joint range of motion, axis and plane of motion

Mini Project:

General effects of injury and disease on joint functioning.

Other Activities (Specify):

Abnormal deviations in joints in disease

122BPT33.5: Relate The Basic Idea Of Abnormal Posture And Pathological Gait

Hours

Item	Hrs
CI	20
LI	00
SW	03
SL	02
Total	25

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO5.1 To Understand Principles of Abnormal Posture</p> <p>SO5.2 To learn about Analysis of postures (anterior, lateral and posterior)</p> <p>SO5.3 To learn about Abnormal postures – biomechanical analysis and effects.</p> <p>SO5.4 Application of Pathological Gait</p> <p>SO5.5 Analysis of Management of pathological gaits</p>		<p>Unit-5 ABNORMAL POSTURE AND PATHOLOGICAL GAIT</p> <p>5.1 Abnormal Posture:</p> <p>5.2 Definition</p> <p>5.3 description.</p> <p>5.4 Analysis of postures (anterior, lateral and posterior)</p> <p>5.5 Alignment of joints in different postural deviations.</p> <p>5.6 Abnormal postures – biomechanical analysis and effects.</p> <p>5.7 Principles of Postural correction</p> <p>5.8 Pathological Gait:</p> <p>5.9 Phases of gait</p> <p>5.10 biomechanical analysis.</p> <p>5.11 Time and distance</p> <p>5.12 parameters – biomechanical significance.</p> <p>5.13 Joint motion – chains of movement</p> <p>5.14 Joint motion – chains of movement</p> <p>5.15 Effects of pain</p> <p>5.16 deformity,</p> <p>5.17 weakness in pathological gaits</p> <p>5.18 Management of pathological gaits</p> <p>5.19 Management of pathological gaits</p> <p>5.20 Management of pathological gaits</p>	<p>1. Management of Pain, Electrical Stimulation of Brain and Spinal cord.</p> <p>2. Infections of brain and Spinal Cord</p>

SW-1 Suggested Sectional

Work (SW): Assignments:

Analysis of postures (anterior, lateral and posterior Mini Project:

Phases of gait – biomechanical

analysis. Other Activities

(Specify):

Effects of pain, deformity, weakness in pathological gaits

Brief of Hours suggested for the Course Outcome

Course Outcomes	Class Lecture (CI)	Sessional Work (SW)	Self-Learning (SI)	Total hour (CI+SW+SI)
122BPT33.1: Define Introduction: Definition And Aim Of Biomechanics, Kinematics And Kinetics Gravity	20	03	02	25
122BPT33.2: Explain the overview of Biomechanics Of Bone,Spine ,And Upper Extrimity	20	03	02	25
122BPT33.3: Illustrate the concept of Biomechanics Of Lower Extremity, Locomotion, Activities Of Daily Living, Good Posture, Postural Deviations	20	03	02	25
122BPT33.4: Analyze the significance of Joint Structure And Function, Kinesiology And Joint Range Of Motion, Axis And Plane Of Motion	20	03	02	25
122BPT33.5: Evaluate the Abnormal Posture And Pathological Gait	20	03	02	25
Total Hours	100	15	10	125

**Suggestion for End Semester Assessment
Suggested Specification Table (For ESA)**

CO	Unit Titles	Marks Distribution				Total Marks
		Ap	An	Ev	Cr	
CO-1	Introduction: Definition And Aim Of Biomechanics, Kinematics And Kinetics Gravity					
CO-2	Biomechanics Of Bone, Spine, And Upper Extrimity					
CO-3	Biomechanics Of Lower Extremitiy, Locomotion, Activities Of Daily Living, Good Posture, Postural Deviations					
CO-4	Joint Structure And Function, Kinesiology And Joint Range Of Motion, Axis And Plane Of Motion					
CO-5	Abnormal Posture And Pathological Gait.					
Total						20

Legend: Ap: Apply, An: Analyze, Ev: Evaluate Cr: Create

Note. Detailed Assessment rubric need to be prepared by the course wise teachers for above tasks. Teachers can also design different tasks as per requirement, for end semester assessment.

Suggested Instructional/Implementation Strategies:

1. Improved Lecture
2. Tutorial
3. Case Method
4. Group Discussion
5. Role Play
6. Visit to hospitals
7. Demonstration

Suggested Learning Resources:

(a) Books:

S. No.	Title	Author	Publisher	Edition & Year
1	Joint Structure and Function: Comprehensive	. Norkin, C.C. and Levangie P.K. Ara	Jaypee, New Delhi	1998
2	Orthopedic and Physical Assessment	Magee, David J.,	Saunders Philadelphia	2002
3	Biomechanics of the Foot and Ankle	Donatelli, R.A.	Davis, Philadelphia	1996
4	Physiology of Joints	Kapandgi, I.A	Churchill-Livingstone	1998
5	Lecture note provided by Faculty of Medical science, AKS University, Satna.			

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4. Dr. Brajesh kumar, Assistant Professor, Department of paramedical science
5. Dr. Poonam Singhariya, Assistant Professor, Department of paramedical science
6. Dr. R.M. Sharma, Professor, Department of paramedical science

CO, POs and PSOs Mapping
Program title: B.P.T (Bachelor of physiotherapy)
Course code122BPT33
Course title: Applied biomechanics &kinesiology

Course outcomes	Program outcomes												Program specific outcome			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO2	PSO3	PSO4
	Disciplinary knowledge	Psychomotor Skills	Communication skills	Critical thinking	Problem Solving	Analytical reasoning	Research – Related Skills	Co-operation /Team Work	Socio-cultural and multicultural competency	Awareness of moral, ethical and legal issues	Leadership qualities	Ongoing Learning:	Ability to Patient professional care .	Ability to Demonstrate clinical decision and patient care	Ability to counsel the patients, family,colleagues and students aspects of physiotherapy treatment.	Ability to Work effectively in various professional collaborative places like hospital.
CO1: Find How To Introduce And Scope Of Regarding Introduction: Definition And Aim Of Biomechanics, Kinematics And Kinetics Gravity	3	2	2	2	3	2	3	2	2	1	2	3	1	3	3	2
CO2: Apply Concepts Regarding The Brief Description Of Biomechanics Of Bone,Spine ,And Upper Extrimity	3	2	2	2	3	2	3	2	2	1	2	3	1	3	3	2
CO3 Learn The Basic Concepts Of Brief Description Of The Biomechanics Of Lower Extremity, Locomotion, Activities Of Daily Living, Good Posture, Postural Deviations	1	1	2	2	3	2	3	2	2	1	3	2	2	3	3	1
CO4 Recall The Basic Concepts Of Joint Structure And Function, Kinesiology And Joint Range Of Motion, Axis And Plane Of Motion	3	2	2	2	3	2	3	2	2	1	2	3	1	3	3	2
CO5: Relate The Basic Idea Of Abnormal Posture And Pathological Gait.	1	1	2	2	3	2	3	2	2	1	3	2	2	3	3	1

Legends: 1- Low, 2- Medium, 3- High

Course Curriculum Map:

POs & PSOs No.	COs No.& Titles	SOs No.	Laboratory Instruction (LI)	Classroom Instruction(CI)	Self Learning (SL)
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO-1: : Define Introduction: Definition And Aim Of Biomechanics, Kinematics And Kinetics Gravity	SO1.1 SO1.2 SO1.3 SO1.4 SO1.5	00	Unit-1.0 Introduction: Definition And Aim Of Biomechanics, Kinematics And Kinetics Gravity 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20	02
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO 2 : Explain the overview of Biomechanics Of Bone,Spine ,And Upper Extrimity	SO2.1 SO2.2 SO2.3 SO2.4 SO2.5	00	Unit-2 Biomechanics Of Bone,Spine ,And Upper Extrimity 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20	02
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO3 : Illustrate the concept of Biomechanics Of Lower Extremity, Locomotion, Activities Of Daily Living, Good Posture, Postural Deviations	SO3.1 SO3.2 SO3.3 SO3.4 SO3.5	00	Unit-3 : Biomechanics Of Lower Extremity, Locomotion, Activities Of Daily Living, Good Posture, Postural Deviations 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20	02
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO 4: Analyze the significance of Joint Structure And Function, Kinesiology And Joint Range Of Motion, Axis And Plane Of Motion	SO4.1 SO4.2 SO4.3 SO4.4 SO4.5	00	Unit-4: Joint Structure And Function, Kinesiology And Joint Range Of Motion, Axis And Plane Of Motion 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20	02
PO: 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO 5: Evaluate the Abnormal Posture And Pathological Gait	SO5.1 SO5.2 SO5.3 SO5.4 SO5.5	00	Unit 5: Abnormal Posture And Pathological Gait. 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20	02

YEAR III

Course Code: 122BPT34

Course Title: Physiotherapeutic in Neurology and Neurosurgery

Pre- requisite: Student should have basic knowledge of physiotherapy management and principles of rehabilitation of neurology & pre-post neurosurgery patient

Rationale: The students studying principles and practice of Physiotherapy plays a crucial role in enhancing the recovery and rehabilitation of patients with neurological and neurosurgical conditions, such as stroke, spinal cord injury, and brain injury, Physiotherapeutic interventions in neurology and neurosurgery focus on improving patients' functional abilities, mobility, and independence, promoting better quality of life.

Course Outcomes:

Course Code:	122BPT34
Course Title:	Physiotherapeutic in Neurology and Neurosurgery
Course Outcomes:	
122BPT34.1	Find how to introduce and scope of Introduction of Neuroanatomy and Physiology
122BPT34.2	Apply concepts regarding the brief description of Developmental disorders
122BPT34.3	Learn the basic concepts of brief description Neuro Physiotherapy Techniques
122BPT34.4	Recall the basic concepts of Neurological Conditions and Physiotherapy Management
122BPT34.5	Relate the basic idea of Physiotherapeutic Management of Neuropathies Peripheral Nerve Injuries, Myopathies, Neurosurgery And Neurosurgical Conditions

Scheme of Studies

CODE	Course Code	Course Title	Scheme of studies (Hours/Week)				Total Study Hours (CI+LI+SW+SL)
			C I	LI	SW	SL	
PCC	122BPT34	Physiotherapeutic in Neurology and Neurosurgery	5	1	1	1	8

Legend: **CI:** Classroom Instruction (Includes different instructional strategies i.e. Lecture (L) and Tutorial (T) and others),

LI: Laboratory Instruction (Includes Practical performances in laboratory workshop, field or other locations using different instructional strategies)

SW: Sessional Work (includes assignment, seminar, mini project etc.),

SL: Self Learning,

Note: SW & SL has to be planned and performed under the continuous guidance and feedback of teacher to ensure outcome of Learning.

Scheme of Examination

Theory

CODE	Course Code	Course Title	Internal Assessment		University Examination			Total
			Theory	Practical	Theory	Viva	Practical	
PCC	122BP T34	Physiotherapeutic in Neurology and Neurosurgery	20	20	100	20	40	200

Course-CurriculumDetailing:

This course syllabus illustrates the expected learning achievements, both at the course and session levels, which students are anticipated to accomplish through various modes of instruction including Classroom Instruction (CI), Laboratory Instruction (LI), Sessional Work (SW), and Self Learning (SL). As the course progresses, students should showcase their mastery of Session Outcomes (SOs), culminating in the overall achievement of Course Outcomes (COs) upon the course's conclusion

122BPT34.1: Find how to introduce and scope of Introduction of Neuroanatomy and Physiology Hours

Item	AppXHrs
CI	22
LI	09
SW	05
SL	03
Total	39

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO1.1 To Understand Principles Neuroanatomy and Physiology</p> <p>SO1.2 To learn about Symptomatology of Neurological disorders</p> <p>SO1.3 To learn about Principles of examination of higher function and applicability in training.</p> <p>SO1.4 Application of Physiotherapy evaluation of a neurological patient</p>	<p>1. Symptomatology of Neurological disorders</p> <p>2 Role of investigations in differential diagnosis, diagnosis</p> <p>3. clinical examination of C.N.S. functions</p> <p>4. clinical examination of cranial nuclei</p> <p>5. Principles of examination of higher function and applicability in training.</p>	<p>Unit-1 Introduction of Neuroanatomy and Physiology</p> <p>1.1 Review Of Neuroanatomy And Physiology.</p> <p>1.2 Review Of Neuroanatomy And Physiology</p> <p>1.3 Review Of Neuroanatomy And Physiology</p> <p>1.4 Symptomatology Of Neurological Disorders,</p> <p>1.5 Symptomatology Of Neurological Disorders</p> <p>1.6 Symptomatology Of Neurological Disorders</p> <p>1.7 Role Of Investigations In Differential Diagnosis,</p> <p>1.8 Role Of Investigations In Differential Diagnosis</p> <p>1.9 Diagnosis And Clinical Examination Of C.N.S.</p> <p>1.10 Diagnosis And Clinical Examination Of C.N.S.</p> <p>1.11 Diagnosis And Clinical Examination Of C.N.S.</p> <p>1.12 Functions Including Cranial Nuclei</p> <p>1.13 Functions Including Cranial Nuclei</p> <p>1.14 Principles Of Examination Of Higher Function</p>	<p>1. Introduction of Neuroanatomy and Physiology.</p> <p>2. Clinical examination of C.N.S. functions</p>

		<p>1.15 Principles Of Examination Of Higher Function</p> <p>1.16 Applicability In Training.</p> <p>1.17 Applicability In Training</p> <p>1.18 Physiotherapy Evaluation Of A Neurological Patient,</p> <p>1.19 Physiotherapy Evaluation Of A Neurological Patient</p> <p>1.20 Electro Diagnostic Procedures,</p> <p>1.21 Interpretations</p> <p>1.22 Prognosis In Different Neurological Conditions.</p>	
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SW-1 Suggested Sectional Work

(SW): Assignments:

Principles of examination of higher function

Mini Project:

Physiotherapy evaluation of a neurological patient,

Other Activities (Specify):

Clinical examination of C.N.S. functions

122BPT34.2: Apply concepts regarding the brief description of Developmental disorders

Hours

Item	AppXHrs
CI	22
LI	09
SW	05
SL	03
Total	39

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO2.1 To Understand Principles of Developmental disorders</p> <p>SO2.2 To learn about Early detection of brain damaged</p> <p>SO2.3 To learn about Principles of examination of higher function and applicability in training.</p> <p>SO2.4 Application of Physiotherapy evaluation of a neurological patient</p>	<p>1. Early detection of brain damaged child,</p> <p>2. Risk babies,</p> <p>3. Neuropediatric examination.</p> <p>4. Developmental programmes</p> <p>5. Delayed milestones.</p> <p>Neuro-developmental screening test.</p>	<p>Unit-2 Developmental disorders</p> <p>2.1 Developmental disorders of C N S.</p> <p>2.2 Developmental disorders of C N S</p> <p>2.2 Developmental disorders of C N S</p> <p>2.4 Early detection of brain damaged child,</p> <p>2.5 Early detection of brain damaged child,</p> <p>2.6 Early detection of brain damaged child,</p> <p>2.8 Risk babies,</p> <p>2.9 Risk babies</p> <p>2.9 Risk babies</p> <p>2.10 Neuropediatric examination.</p> <p>2.11 Neuropediatric examination</p> <p>2.12 Neuropediatric examination</p> <p>2.13 Developmental programmes</p> <p>2.14 Developmental programmes</p> <p>2.15 Developmental programmes</p> <p>2.16 Delayed milestones.</p> <p>2.17 Delayed milestones</p> <p>2.18 Delayed milestones</p> <p>2.19 Neuro-developmental screening test.</p> <p>2.20 Neuro-developmental screening test</p>	<p>1. Developmental programmes</p> <p>2. Early detection of brain damaged child,</p> <p>3. Risk babies</p>

		2.21 Neuro-developmental screening test	
		2.22 Neuro-developmental screening test	

SW-1 Suggested Sectional Work (SW): Assignments: Developmental programmes and Delayed milestones. Mini Project: Neuro-developmental screening test. Other Activities (Specify): Neuropediatric examination

122BPT34.3: Learn the basic concepts of brief description Neuro Physiotherapy Techniques

Hours

Item	AppXHrs
CI	22
LI	09
SW	05
SL	03
Total	39

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO3.1 To Understand Principles of Neuro physiotherapy Techniques</p> <p>SO3.2 To learn about Bobath’s, Rood’s, techniques</p> <p>SO3.3 To learn about PNF, Vojta techniques, biofeedback techniques</p> <p>SO3.4 Application of Brunnstorm, Motor Relearning programming.</p>	<p>1. Developme ntal physiotherapy programs (Neuro developmental approaches) , reeducation and retraining techniques in neurologi cal conditions, approaches like: Bobath’s, Rood’s, PNF, Vojta techniques, biofeedback, Brunnstorm, Mot or Relearning programming .</p>	<p>Unit-3 NEURO PHYSIOTHERAPY TECHNIQUES</p> <p>3.1 Minimum Brain Damage.</p> <p>3.2 Sensory,</p> <p>3.3 Motor,</p> <p>3.4 Functional Psycho-Social</p> <p>3.5 behaviours Of A Child.</p> <p>3.6 Developmental Physiotherapy Programs (Neuro Developmental Approaches) ,</p> <p>3.7 Reeducation Techniques In Neurological Retraining Techniques In Neurological Conditions, Approaches Like:</p> <p>3.8 Bobath’S,</p> <p>3.9 Rood’S,</p> <p>3.10 PNF,</p> <p>3.11 PNF,</p> <p>3.12 Vojta Techniques,</p> <p>3.13 Vojta Techniques</p> <p>3.14 Biofeedback,</p> <p>3.15 Biofeedback,</p> <p>3.16 Brunnstorm,</p> <p>3.17 Brunnstorm,</p>	<p>1. Sensory, Motor, Functional Psycho- social behaviours of a child.</p>

		<p>3.18 Motor Relearning Programming .</p> <p>3.19 Motor Relearning Programming</p> <p>3.20 Primitive Patterns</p> <p>3.21 Abnormal Motor Behaviour Due To Brain Damage,</p> <p>3.22 Its Control And Training With Reference To Gait and Hand Function.</p>	
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SW-1 Suggested Sectional Work (SW):

Assignments:

Bobath's, Rood's, PNF, Vojta techniques, biofeedback, Brunstorm, Motor Relearning programming .

Mini Project:

Primitive patterns and abnormal motor behavior

Other Activities (Specify):

Gait and hand function training

122BPT34.4: Recall the basic concepts of Neurological Conditions and Physiotherapy Management

Hours

Item	AppXHrs
CI	22
LI	09
SW	05
SL	03
Total	39

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO4.1 To Understand neurological conditions & physiotherapy management of Stroke, meningitis, encephalitis, basal ganglion diseases , Parkinson’s disease, Cerebral palsy, Ataxia, Cerebellar Ataxia, Friedreich’s Ataxia , Brain tumors</p> <p>SO4.2 To learn about Traumatic brain injury</p> <p>SO4.3 To learn about Assessment and Treatment techniques Motor Neuron Disease ,Disseminated sclerosis, Transverse myelitis, Spinal tumors, Poliomyelitis, Syringomyelia, spina bifida, Subacute combined degeneration of spinal cord.</p> <p>SO4.4 Application of Spinal cord injury</p>	<p>1. Physiotherapy management of Stroke,</p> <p>2. meningitis, encephalitis, basal ganglion diseases</p> <p>3. Parkinson’s disease, Cerebral palsy, Ataxia,</p> <p>4. Cerebellar Ataxia, Friedreich’s Ataxia , Brain tumors</p> <p>5. Physiotherapy management of Traumatic brain injury</p> <p>6. Physiotherapy management of Motor Neuron Disease Disseminated sclerosis, Transverse myelitis, Spinal tumors, Poliomyelitis, Syringomyelia, spina bifida,</p> <p>7. Physiotherapy management of Spinal cord injury</p>	<p>UNIT-4 NEUROLOGICAL CONDITIONS AND PHYSIOTHERAPY MANAGEMENT</p> <p>4.1 Assessment and principles of therapeutic management of following neurological conditions: Stroke,</p> <p>4.2 Meningitis,</p> <p>4.3 Encephalitis,</p> <p>4.4 Basal Ganglion Diseases</p> <p>4.5 Parkinson’s disease</p> <p>4.6 Cerebral palsy,</p> <p>4.7 Ataxia, Cerebellar Ataxia, Friedreich’s Ataxia</p> <p>4.8 Brain tumors</p> <p>4.9 Traumatic brain injury: Types and Mechanisms of head injury, Clinical features, potential complications</p> <p>4.10 Physiotherapy principles of immediate and postoperative therapeutic management</p> <p>4.11 Assessment and Treatment techniques of:- Motor Neuron Disease</p> <p>4.12 Disseminated sclerosis</p> <p>4.13 Transverse myelitis</p> <p>4.15 Spinal tumors</p> <p>4.16 Poliomyelitis</p> <p>4.17 Syringomyelia</p> <p>4.18 spina bifida</p> <p>4.19 Subacute combined degeneration of spinal cord.</p> <p>4.20 Spinal cord injury: review of anatomy and physiology</p> <p>4.21 Physiotherapy Assessment of Spinal cord injury</p> <p>4.22 Principles of Physiotherapy at various stages of Spinal cord injury Rehabilitation goals and ADL training.</p>	<p>1. Neurological conditions: Stroke, meningitis, encephalitis, basal ganglion diseases , Parkinson’s disease.</p> <p>2. Spinal cord injury management</p>

SW-1 Suggested Sectional Work (SW):

Assignments:

Stroke, meningitis, encephalitis, basal ganglion diseases , Parkinson's disease, Cerebral palsy, Ataxia, Cerebellar Ataxia, Friedreich's Ataxia
, Brain tumors

Mini Project:

Spinal cord injury, Rehabilitation goals and ADL training.

Other Activities

(Specify):

Traumatic brain
injury

122BPT34.5: Relate the basic idea of Physiotherapeutic Management Of Neuropathies Peripheral Nerve Injuries, Myopathies, Neurosurgery And Neurosurgical Conditions

Hours

Item	AppXHrs
CI	22
LI	09
SW	05
SL	03
Total	39

Session Outcom (SOs)	Laboratory Instructio (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO5.1 To Understand physiotherapeutic management of neuropathies</p> <p>SO5.2 To learn about physiotherapeutic management of peripheral nerve injuries,</p> <p>SO5.3 To learn about physiotherapeutic management of Myopathies</p> <p>SO5.4 Application of physiotherapeutic management of neurosurgical conditions</p>	<p>1 Assessment and treatment of neuropathies.</p> <p>2 Peripheral nerve injuries, surgical resection & repair: Classification & types, Functional assessment, investigation, diagnosis & prognosis, Physiotherapeutic management</p> <p>3 Assessment and treatment of Myopathies including neuromuscular junction disorders.</p> <p>4 Neurosurgery: Post surgical Physical therapy in neurosurgical procedures – craniotomy, shunts, SOL resection, surgi</p>	<p>UNIT-5 PHYSIOTHERAPEUTIC MANAGEMENT OF NEUROPATHIES PERIPHERAL NERVE INJURIES, MYOPATHIES, NEUROSURGERY AND NEUROSURGICAL CONDITIONS</p> <p>5.1 Assessment and treatment of neuropathies.</p> <p>5.2 Assessment and treatment of neuropathies</p> <p>5.3 Peripheral nerve injuries,</p> <p>5.4 Peripheral nerve injuries</p> <p>5.5 surgical resection & repair:</p> <p>5.6 surgical resection & repair</p> <p>5.7 Classification & types, Functional assessment, investigation,</p> <p>5.8 Classification & types, Functional assessment, investigation</p> <p>5.9 diagnosis & prognosis, Physiotherapeutic management</p> <p>5.10 diagnosis & prognosis, Physiotherapeutic management</p> <p>5.11 Assessment and treatment of Myopathies including neuromuscular junction disorders.</p> <p>5.12 Assessment and treatment of Myopathies including neuromuscular junction disorders.</p>	<p>1. Peripheral nerve injuries, surgical resection & repair: Classification & types, Functional assessment, investigation, diagnosis & prognosis, Physiotherapeutic management</p>

	cal treatment of spasticity, cervical cord decompression	5.13 Neurosurgery: Post surgical Physical therapy in neurosurgical procedures – 5.14 Craniotomy 5.15 craniotomy 5.16 shunts 5.17 shunts 5.18 SOL resection, 5.19 surgical treatment of spasticity 5.20 surgical treatment of spasticity 5.21 cervical cord decompression 5.22 cervical cord decompression	
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Assignments:

Assessment and treatment of neuropathies.

Mini Project:

Neurosurgery: Post surgical Physical therapy in neurosurgical procedures

Other Activities (Specify):

Assessment and treatment of Myopathies including neuromuscular junction disorders

Brief of Hours suggested for the Course Outcome

Course Outcomes	Class Lecture (CI)	Sessional Work (SW)	Self-Learning (SI)	Total hour (CI+SW+SI)
122BPT34.1: Define Introduction of Neuroanatomy and Physiology	22	5	3	30
122BPT34.2: Explain the overview of Developmental disorders .	22	5	3	30
122BPT34.3: Illustrate the concept of Neuro Physiotherapy Techniques	22	5	3	30
122BPT34.4: Analyze the significance of Neurological Conditions And Physiotherapy Management .	22	5	3	30
122BPT34.5: Evaluate the Physiotherapeutic Management Of Neuropathies Peripheral Nerve Injuries, Myopathies, Neurosurgery And Neurosurgical Conditions	22	5	3	30
Total Hours	110	25	15	150

**Suggestion for End Semester Assessment
Suggested Specification Table (For ESA)**

CO	Unit Titles	Marks Distribution				Total Marks
		Ap	An	Ev	Cr	
CO-1	Introduction of Neuroanatomy and Physiology					
CO-2	Overview of Developmental disorders					
CO-3	Neuro Physiotherapy Techniques					
CO-4	Neurological Conditions And Physiotherapy Management .					
CO-5	Physiotherapeutic Management Of Neuropathies Peripheral Nerve Injuries, Myopathies, Neurosurgery And Neurosurgical Conditions.					
Total						100

Legend: Ap: Apply, An: Analyze, Ev: Evaluate Cr: Create

Note. Detailed Assessment rubric need to be prepared by the course wise teachers for above tasks. Teachers can also design different tasks as per requirement, for end semester assessment.

Suggested Instructional/Implementation Strategies:

1. Improved Lecture
2. Tutorial
3. Case Method
4. Group Discussion
5. Role Play
6. Visit to hospitals
7. Demonstration

Suggested Learning Resources:

(a) Books:

S. No.	Title	Author	Publisher	Edition & Year
1	Cash's Textbook of Neurology for Physiotherapy	Downie, P.A	Jaypee, New Deli	1993
2	Adult Hemiplegia: Evaluation and treatment	1. Bobath, Berta t	Butterworth, Oxford	1990
3	Stroke Rehabilitation	Carr, J.H. and Shepherd, R.B.	Butterworth-Heinemann, Singapore	2003
4	Neurological Rehabilitation	Umphred, Dracy A,	Mosby, London	2001
5	Lecture note provided by Faculty of Medical science, AKS University, Satna .			

Curriculum Development Team

1. Professor (Dr.) GP Richariya, Dean, Faculty of Medical Science, AKS University
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CO, POs and PSOs Mapping
Program title: B.P.T (Bachelor of physiotherapy)
Course code: 122BPT34

Course title: Physiotherapeutic in Neurology and Neurosurgery

Course outcomes	Program outcomes												Program specific outcome			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO2	PSO3	PSO4
	Disciplinary knowledge	Psychomotor Skills	Communication skills	Critical thinking	Problem Solving	Analytical reasoning	Research – Related Skills	Co-operation /Team Work	Socio-cultural and multicultural competency	Awareness of moral, ethical and legal issues	Leadership qualities	Ongoing Learning:	Ability to Patient professional care .	Ability to Demonstrate clinical decision patient care	Ability to counsel the patients, family, colleagues and students aspects of physiotherapy treatment.	Ability to Work effectively in various professional collaborative places like hospital.
CO1: Find how to introduce and scope of Introduction of Neuroanatomy and Physiology.	1	1	2	2	3	2	3	2	2	1	3	2	2	3	3	1
CO2: Apply concepts regarding the brief description of Developmental disorders	1	1	2	2	1	2	3	2	1	1	2	2	2	2	2	1
CO3: Learn the basic concepts of brief description Neuro Physiotherapy Techniques	2	2	1	1	2	2	2	1	2	1	2	1	1	2	2	2
CO4: Recall the basic concepts of Neurological Conditions And Physiotherapy Management	3	2	2	2	3	2	3	2	2	1	2	3	1	3	3	2
CO5: Relate the basic idea of Physiotherapeutic Management Of Neuropathies Peripheral NerveInjuries, Myopathies, Neurosurgery And Neurosurgical Conditions	.	.	.	1	1	3	3	3	1	1	2	2	1	3	1	3

Legends: 1- Low, 2- Medium, 3- Hig

Course Curriculum Map:

POs & PSOs No.	COs No.& Titles	SOs No.	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO-1: Define Introduction of Neuroanatomy and Physiology	SO1.1 SO1.2 SO1.3 SO1.4 SO1.5	09	Unit-1.0 Introduction of Neuroanatomy and Physiology 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22	03
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO 2 : Explain the overview of Developmental disorders.	SO2.1 SO2.2 SO2.3 SO2.4 SO2.5	09	Unit-2 Overview of Developmental disorders 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22	03
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO3 : Illustrate the concept of Neuro Physiotherapy Techniques	SO3.1 SO3.2 SO3.3 SO3.4 SO3.5	09	Unit-3 : Neuro Physiotherapy Techniques 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22	03
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO 4: Analyze the significance of Neurological Conditions And Physiotherapy Management.	SO4.1 SO4.2 SO4.3 SO4.4 SO4.5	09	Unit-4: Neurological Conditions And Physiotherapy Management . 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22	03
PO: 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO 5: Evaluate the Physiotherapeutic Management Of Neuropathies Peripheral NerveInjuries, Myopathies, Neurosurgery And NeurosurgicalConditions	SO5.1 SO5.2 SO5.3 SO5.4 SO5.5	09	Unit 5: Physiotherapeutic Management Of Neuropathies Peripheral Nerve Injuries, Myopathies, Neurosurgery And Neurosurgical Conditions 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22	03

YEAR III

Course Code: 122BPT35
Course Title: Physiotherapeutic in Orthopedic Condition
Pre-requisite: Course assessment methods: CT & EA

Rationale: The students studying principles and practice of management will be able to understand the application of principles of management which makes the manager more realistic, thoughtful, justifiable and free from personal bias. The decisions taken on the basis of principles of management are subject to evaluation and objective assessment.

Course Outcomes:

Course Code:	122BPT35
Course Title:	Physiotherapeutic in Orthopedic Condition
Course Outcomes:	
122BPT35.1	Find how to introduce and scope of Traumatology And Orthopedics, Principles Of Physiotherapy Evaluation
122BPT35.2	Apply concepts regarding the brief description of Soft Tissue Injuries. Assessment, Treatment And Management Of Degenerative And Infective Conditions
122BPT35.3	Learn the basic concepts of brief description Orthopedical Deformities, Orthopedics Surgery
122BPT35.4	Recall the basic concepts of the Amputations
122BPT35.5	Relate the basic idea of Manipulation Therapy

Scheme of Studies

CODE	Course Code	Course Title	Scheme of studies (Hours/Week)				Total Study Hours (CI+LI+SW+SL)
			C I	LI	SW	SL	
PCC	122BPT35	Physiotherapeutic in Orthopedic Condition	6	0	1	1	8

- Legend:** **CI:** Classroom Instruction (Includes different instructional strategies i.e. Lecture (L) and Tutorial (T) and others),
LI: Laboratory Instruction (Includes Practical performances in laboratory workshop, field or other locations using different instructional strategies)
SW: Sessional Work (includes assignment, seminar, mini project etc.),
SL: Self Learning,

Note: SW & SL has to be planned and performed under the continuous guidance and feedback of teacher to ensure outcome of Learning.

Scheme of Examination

Theory

CODE	Course Code	Course Title	Internal Assessment		University Examination			Total
			Theory	Practical	Theory	Viva	Practical	
PCC	122B PT35	Physiotherapeutic in Orthopedic Condition	20	20	100	20	40	200

Course-Curriculum Detailing:

This course syllabus illustrates the expected learning achievements, both at the course and session levels, which students are anticipated to accomplish through various modes of instruction including Classroom Instruction (CI), Laboratory Instruction (LI), Sessional Work (SW), and Self Learning (SL). As the course progresses, students should showcase their mastery of Session Outcomes (SOs), culminating in the overall achievement of Course Outcomes (COs) upon the course's conclusion.

122BPT 35.1 Find how to introduce and scope of Traumatology and Orthopedics, Principles Of Physiotherapy Evaluation

Hours

Item	Hrs
CI	24
LI	08
SW	04
SL	02
Total	38

Session Out comes(SOs)	Laboratory Instruction(LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO1.1 Understand physiotherapeutic in orthopaedic conditions</p> <p>SO1.2 learn Musculo skeletal dysfunction clinically</p> <p>SO1.3 learn about therapeutic skills in different orthopaedic conditions</p> <p>SO1.4 understand the orthopedical treatment outline</p> <p>SO1.5 understand fracture management.</p>	<p>1.physiotherapy assessment</p> <p>2.assessment Degenerative and infective Conditions</p> <p>3.amputation assessment</p>	<p>UNIT 1. Traumatology and Orthopedics, Principles of Physiotherapy evaluation,</p> <p>1.1 Classification of fractures, causes and types,</p> <p>1.2 Classification of fractures, causes and types</p> <p>1.3 Classification of fractures, causes and types</p> <p>1.4 Classification of fractures, causes and types</p> <p>1.5 Signs and symptoms, Complications</p> <p>1.6 Signs and symptoms, Complications,</p> <p>1.7 Signs and symptoms, Complications</p> <p>1.8 Signs and symptoms, Complications</p> <p>1.9 Healing and factors affecting</p> <p>1.10 Healing and factors affecting</p> <p>1.11 Healing and factors affecting</p> <p>1.12 Principles of fracture management</p> <p>1.13 Principles of fracture management</p> <p>1.14 Principles of fracture management</p> <p>1.15 Prevention and treatment of common complications:</p> <p>1.16 Prevention and treatment of common complications</p> <p>1.17 Prevention and treatment of</p>	<p>1.Learn the key points about fracture</p> <p>2.Learn about physiotherapy assessment,</p>

		<p>common complications</p> <p>1.18 Principles of Physiotherapy management,</p> <p>1.19 Management Of Complication. Dislocation</p> <p>1.20 Management Of Complication. Dislocation</p> <p>1.21 Management Of Complication. Dislocation</p> <p>1.22 Principles of Physiotherapy evaluation.</p> <p>1.23 Principles of Physiotherapy evaluation</p> <p>1.24 Principles of Physiotherapy evaluation</p>	
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SW-1 Suggested Sectional Work (SW):

Assignments:

Orthopedic assessment

Mini Project:

Fracture healing

Other Activities (Specify):

Physical patient assessment

122BPT 35.2. Apply concepts regarding the brief description of Soft Tissue Injuries. Assessment, Treatment and Management of Degenerative And Infective Conditions:

HOURS

Item	Hrs
CI	24
LI	08
SW	04
SL	02
Total	38

Session Out comes(SOs)	Laboratory Instruction(LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO2.1 Assessment and therapeutic management of Sprains, strains, ligament</p> <p>SO2.2 learn about Tennis elbow, Golfer’s Elbow, Retrocalcaneal bursitis.</p> <p>SO2.3 learn about Osteoarthritis of major joints</p> <p>SO2.4 understand the Prolapsed intervertebral disc , Lumbar cord decompression</p> <p>SO2.5 understand Tuberculosis of spine, Bone and Major joints, perthes disease</p>	<p>1.physiotherapy assessment</p> <p>2.assessment Degenerative and infective Conditions</p> <p>3. Osteoarthritis</p>	<p>UNIT 2 Soft Tissue injuries. Assessment, treatment and management of Degenerative and infective Conditions</p> <p>2.1.Assessment and therapeutic</p> <p>2.2 Management Of Sprains</p> <p>2.3 strains,</p> <p>2.4 ligament</p> <p>2.5cartilage tear (Tear of semilunar cartilage and cruciate ligament of knee)</p> <p>2.6 rupture</p> <p>2.7Synovitis,</p> <p>2.8 Capsulitis,</p> <p>2.8Volkman’s ischamic contracture.</p> <p>2.9 Rotator cuff tendinitis</p> <p>2.10 Ankle sprains, Tennis elbow, Golfer’s Elbow, Retrocalcaneal bursitis.</p> <p>2.11 Osteoarthritis of major joints.</p> <p>2.11 Spondylosis,</p> <p>2.12 spondylitis,</p> <p>2.13 spondylolisthesis,</p> <p>2.14 Prolapsed intervertebral disc</p> <p>2.15 Lumbar cord decompression,</p> <p>2.16 peri-arthritis,</p> <p>2.17 Rotatory cuff lesion of shoulder</p> <p>2.18 Tuberculosis of spine</p> <p>2.19 Bone and Major joints</p> <p>2.20 perthes disease,</p> <p>2.21 Avascular bony necrosis at hip joint</p> <p>2.22 Rheumatoid arthritis, Ankylosing spondylitis</p> <p>2.23 Rheumatoid arthritis, Ankylosing spondylitis</p> <p>2.24 Rheumatoid arthritis, Ankylosing spondylitis</p>	<p>1.learn the key points of soft tissue injury</p> <p>2.Learn about physiotherapy assessment,</p>

SW-1 Suggested Sectional Work (SW):

Assignments:

Orthopedic assessment

Mini Project:

PIVD

Other Activities (Specify):

Physical patient assessment of TB of bone

122BPT 35.3; Learn the basic concepts of brief description Orthopedical Deformities, Orthopedics Surgery:
Hours

Item	Hrs
CI	24
LI	08
SW	04
SL	02
Total	38

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO3.1 learn about Assessment and therapeutic management of congenital deformities</p> <p>SO3.2 learn about spinal deformities.</p> <p>SO3.3 learn about hip dislocation</p> <p>SO3.4 understand the orthopedic surgeries</p> <p>SO3.5 understand tendon transfer and soft tissue surgery</p>	<p>1. Physiotherapy Assessment Of Deformities</p> <p>2. Assessment Of Shoulder Dislocation</p> <p>3. Tendon Transfers,</p> <p>4. Soft Tissue Releases Surgeries</p>	<p>UNIT-3: Acquired knowledge regarding orthopedical Deformities, Orthopedics Surgery</p> <p>3.1 Congenital: Torticollis</p> <p>3.2 Cervical Rib,</p> <p>3.3 Thoracic Outlet Syndrome</p> <p>3.4 C.T.E.V.,</p> <p>3.5 Pes cavus</p> <p>3.6 Pes Planus And Other Common Deformities.</p> <p>3.7 Coxa Vara</p> <p>3.8 Genu Valgum</p> <p>3.9 Genu Varum</p> <p>3.10 Genu Recurvatum.</p> <p>3.11 General Principles Of Physiotherapy Assessment</p> <p>3.12 Management In Dislocations Including Complications With Special Consideration In Shoulder Dislocation</p> <p>3.13 Hip Dislocation.,</p> <p>3.14 General Principles Of Assessment, Physiotherapy Management In Surgical Conditions Like – Osteotomy</p> <p>3.15 Joint Replacements</p> <p>3.16 Orif</p> <p>3.17 Arthroplasty</p> <p>3.18 Arthodesis</p> <p>3.19 Illizarov'S Technique</p> <p>3.20 Tendon Transfers</p> <p>3.21 Soft Tissue Releases</p> <p>3.22 Soft Tissue Repair Tendon Transplant, Grafting, Arthroscopy, Spinal Stabilization</p> <p>3.23 Reattachment Of Limbs,</p> <p>3.24 Operation In C.P. And Polio</p>	<p>1. learn the key points of deformities</p> <p>2. Learn about physio therapy assessment, of deformities</p>

SW-1 Suggested Sectional Work (SW):

Assignments: Orthopedic assessment

Mini Project:

Cerebral Palsy

Other Activities (Specify):

Poster on Scoliosis, Kyphosis, Lordosis

122BPT 35.4: Recall the basic concepts of the Amputations

Hours

Item	Hrs
CI	24
LI	08
SW	04
SL	02
Total	38

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO4.1 learn about Assessment of amputaion</p> <p>SO4.2 learn about evaluation of stump</p> <p>SO4.3 learn about stump bandaging</p> <p>SO4.4 understand the Pre and Post Prosthesis fitting assessment and management</p> <p>SO4.5 understand Complications of Amputations</p>	<p>1.physiotherapy assessment of Amputation</p> <p>2.training of prosthesis</p> <p>3. gait trainng</p>	<p>UNIT-4: Aquired knowledge regarding Amputations</p> <p>4.1 Levels of Amputation of upper extremity</p> <p>4.2 Levels of Amputation of upper extremity</p> <p>4.3 Levels of Amputation of lower extremity</p> <p>4.5 Levels of Amputation of lower extremity</p> <p>4.6.pre operative evaluation</p> <p>4.7.pre operative evaluation</p> <p>4.8postoperative evaluation</p> <p>4.9 postoperative evaluation</p> <p>4.10 principles of management,</p> <p>4.11 principles of management</p> <p>4.12stump bandaging,</p> <p>4.13stump bandaging</p> <p>4.14 Pre Prosthesis fitting assessment</p> <p>4.15 Pre Prosthesis fitting assessmen</p> <p>4.16 Post Prosthesis fitting assessment management</p> <p>4.17 Post Prosthesis fitting assessment management</p> <p>4.18 check-out of Prosthesis Training</p> <p>4.19check-out of Prosthesis Training</p> <p>4.20 Complications of Amputations</p> <p>4.21 Complications of Amputations</p> <p>4.22 Amputations management.</p> <p>4.23 Amputations management</p> <p>4.24 Amputations management</p>	<p>1.learn the key points amputaion</p>

SW-1 Suggested Sectional Work (SW):

Assignments: Prothesis

Mini Project:

stump bandaging

Other Activities (Specify):

Gait training

122BPT 35.5: Relate the basic idea of Manipulation Therapy

Hours

Item	Hrs
CI	24
LI	08
SW	04
SL	02
Total	38

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO5.1 learn about Assessment of patient for manipulation</p> <p>SO5.2 learn about indication of manipulation</p> <p>SO5.3 learn about maitland techniques</p> <p>SO5.4 understand the mulligan technique</p> <p>SO5.5 understand Complications of manipulation</p>	<p>1.manual therapy</p> <p>2.training of mobilization</p> <p>3.Principles and Techniques of Therapy</p> <p>4. Maitland technique</p>	<p>UNIT-5: Aquired knowledge regarding Manipulation therapy</p> <p>5.1.General assessment,</p> <p>5.2 General assessment</p> <p>5.3 indications,</p> <p>5.4 indications</p> <p>5.5 contra indications,</p> <p>5.6 contra indications</p> <p>5.7 Principles and Techniques of Therapy</p> <p>5.8 Principles and Techniques of Therapy</p> <p>5.9 Factors considered in therapy.</p> <p>5.10 Factors considered in therapy</p> <p>5.11Brief introduction to schools of manual therapy</p> <p>5.12 Brief introduction to schools of manual therapy</p> <p>5.13Maitland,</p> <p>5.14 Maitland</p> <p>5.16 Maitland</p> <p>5.17 Kaltenborne,</p> <p>5.18 Kaltenborne</p> <p>5.19Cyriax,</p> <p>5.20 Cyriax</p> <p>5.21 Mulligan,</p> <p>5.22 Mulligan,</p> <p>5.23 Mackenzie</p> <p>5.24 Mackenzie</p>	<p>1.learn the key point of manupulation</p>

SW-1 Suggested Sectional Work (SW):

Assignments:

concave convex rule

Mini Project:

Cerebral palsy

Other Activities (Specify):

Mackenzie technique practical

Brief of Hours suggested for the Course Outcome

Course Outcomes	Class Lecture (CI)	Sessional Work (SW)	Self-Learning (SI)	Total hour (CI+SW+SI)
122BPT 35.1: Define Traumatology, Orthopedics, and Principles Of Physiotherapy Evaluation	24	4	2	30
122BPT 35.2: Explain the overview of Soft Tissue Injuries. Assessment, Treatment And Management Of Degenerative And Infective Conditions	24	4	2	30
122BPT 35.3: Illustrate the concept of Orthopedical Deformities, Orthopedics Surgery	24	4	2	30
122BPT 35.4: Analyze the significance of Amputations	24	4	2	30
122BPT 35.5: Evaluate the Manipulation Therapy	24	4	2	30
Total Hours	120	20	10	150

**Suggestion for End Semester Assessment
Suggested Specification Table (For ESA)**

CO	Unit Titles	Marks Distribution				Total Marks
		Ap	An	Ev	Cr	
CO-1	Traumatology, Orthopedics, and Principles Of Physiotherapy Evaluation					
CO-2	Overview of Soft Tissue Injuries. Assessment, Treatment And Management Of Degenerative And Infective Conditions					
CO-3	Orthopedical Deformities, Orthopedics Surgery					
CO-4	Amputations					
CO-5	Manipulation Therapy.					
Total						100

Legend: Ap: Apply, An: Analyze, Ev: Evaluate Cr: Create

Note. Detailed Assessment rubric need to be prepared by the course wise teachers for above tasks. Teachers can also design different tasks as per requirement, for end semester assessment.

Suggested Instructional/Implementation Strategies:

1. Improved Lecture
2. Tutorial
3. Case Method
4. Group Discussion
5. Role Play
6. Visit to hospitals
7. Demonstration

Suggested Learning Resources:

(a) Books:

S. No.	Title	Author	Publisher	Edition & Year
1	Cash's Textbook of Orthopedics and Rheumatology	Downie, Patricia A. Jaypee, New Delhi	Jaypee, New Delhi	2009
2	Orthopedic Physical Therapy	Donatelli, R. A. and Wooden, M.J.	Churchill-Livingstone, New York	2009
3	Orthopedic Physiotherapy	Tidswell, Marian	Mosby, London	First Edition
4	Maitland's Vertebral Manipulation	Maitland, G.D	Butter worth-Heine, Oxford	2006
5	Lecture note provided by Faculty of Management, AKS University, Satna.			

Curriculum Development Team

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6. Dr. R.M. Sharma, Professor, Department of paramedical science. AKS University

CO, POs and PSOs Mapping
Program title: B.P.T (Bachelor of physiotherapy)
Course code: 122BPT 35
Course title: Physiotherapeutic in Orthopedic Condition

Course outcomes	Program outcomes												Program specific outcome			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO2	PSO3	PSO4
	Disciplinary knowledge	Psychomotor Skills	Communication skills	Critical thinking	Problem Solving	Analytical reasoning	Research – Related Skills	Co-operation /Team Work	Socio-cultural and multicultural competency	Awareness of moral, ethical and legal issues	Leadership qualities	Ongoing Learning:	Ability to Patient professional care .	Ability to Demonstrate clinical decision and patient care	Ability to counsel the patients, family, colleagues and students aspects of physiotherapy treatment.	Ability to Work effectively in various professional collaborative places like hospital.
CO1: Find how to introduce and scope of Traumatology And Orthopedics, Principles Of Physiotherapy Evaluation	3	2	2	2	3	2	3	2	2	1	2	3	1	3	3	2
CO2: Apply concepts regarding the brief description of Soft Tissue Injuries. Assessment, Treatment And Management Of Degenerative And Infective Conditions	3	2	2	2	3	2	3	2	2	1	2	3	1	3	3	2
CO3. Learn the basic concepts of brief description Orthopedical Deformities, Orthopedics Surgery.	1	1	2	2	3	2	3	2	2	1	3	2	2	3	3	1
CO4 Recall the basic concepts of the Amputations	3	2	2	2	3	2	3	2	2	1	2	3	1	3	3	2
CO5: Relate the basic idea of Manipulation Therapy.	1	1	2	2	3	2	3	2	2	1	3	2	2	3	3	1

Legends: 1- Low, 2- Medium, 3- High

Course Curriculum Map:

POs & PSOs No.	COs No.& Titles	SOs No.	Laboratory Instruction (LI)	Classroom Instruction(CI)	Self Learning (SL)
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO-1: Define Traumatology, Orthopedics, and Principles Of Physiotherapy Evaluation	SO1.1 SO1.2 SO1.3 SO1.4 SO1.5	08	Unit-1.0 Traumatology, Orthopedics, and Principles Of Physiotherapy Evaluation 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24	02
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO 2 : Explain the overview of Soft Tissue Injuries. Assessment, Treatment And Management Of Degenerative And Infective Conditions	SO2.1 SO2.2 SO2.3 SO2.4 SO2.5	08	Unit-2 Soft Tissue Injuries. Assessment, Treatment And Management Of Degenerative And Infective Conditions 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24	02
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO3 : Illustrate the concept of Orthopedical Deformities, Orthopedics Surgery	SO3.1 SO3.2 SO3.3 SO3.4 SO3.5	08	Unit-3 : Orthopedical Deformities, Orthopedics Surgery 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24	02
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO 4: Analyze the significance of Amputations .	SO4.1 SO4.2 SO4.3 SO4.4 SO4.5	08	Unit-4: Amputations 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24	02
PO: 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO 5: Evaluate the Manipulation Therapy	SO5.1 SO5.2 SO5.3 SO5.4 SO5.5	08	Unit 5: Manipulation Therapy. 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24	02

YEAR III

Course Code: 122BPT36
Course Title: Physical evaluation diagnosis and prescription
Pre- requisite: Course assessment methods: CT & EA

Rationale: The students studying principles and practice of Developing skills in physical diagnosis enables healthcare professionals to conduct thorough patient assessments, leading to accurate diagnoses and effective treatment plans, By mastering physical diagnosis techniques, healthcare professionals can identify potential health issues early, initiate appropriate interventions, and enhance patient outcomes.

Course Outcomes:

Course Code:	122BPT36
Course Title:	Physical evaluation diagnosis and prescription
Course Outcomes:	
122BPT36.1	Find how to introduce general principles of human development & maturation
122BPT36.2	Apply concepts regarding the electro diagnosis therapeutic current as a tool for electro diagnosis.
122BPT36.3	Learn the basic concepts of the assessment of neurological dysfunction and interpretation of electro diagnostic findings.
122BPT36.4	Recall the basic concepts the assessment of musculoskeletal dysfunction
122BPT36.5	Relate the basic idea of cardiopulmonary, posture, pelvic floor muscle strength, obesity.

Scheme of Studies

CODE	Course Code	Course Title	Scheme of studies (Hours/Week)					Total Credits (C)
			C I	LI	SW	SL	Total Study Hours (CI+LI+SW+SL)	
PCC	122BPT35	Physical evaluation diagnosis and prescription	6	0	1	1	8	6

- Legend:** **CI:** Classroom Instruction (Includes different instructional strategies i.e. Lecture (L) and Tutorial (T) and others),
LI: Laboratory Instruction (Includes Practical performances in laboratory workshop, field or other locations using different instructional strategies)
SW: Sessional Work (includes assignment, seminar, mini project etc.),
SL: Self Learning,
C: Credits.

Note: SW & SL has to be planned and performed under the continuous guidance and feedback of teacher to ensure outcome of Learning.

Scheme of Examination

Theory

CODE	Course Code	Course Title	Internal Assessment		University Examination			Total
			Theory	Practical	Theory	Viva	Practical	
PCC	122B PT35	Physical evaluation diagnosis and prescription	20	20	100	20	40	200

This course syllabus illustrates the expected learning achievements, both at the course and session levels, which students are anticipated to accomplish through various modes of instruction including Classroom Instruction (CI), Laboratory Instruction (LI), Sessional Work (SW), and Self Learning (SL). As the course progresses, students should showcase their mastery of Session Outcomes (SOs), culminating in the overall achievement of Course Outcomes (COs) upon the course's conclusion.

121BPT36.1; Find how to introduce general principles of human development & maturation

Hours

Item	AppXHrs
CI	24
LI	08
SW	02
SL	02
Total	36

Session Out comes(SOs)	Laboratory Instruction(LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO1.1 Understand aspect and principle of human development</p> <p>SO1.2 read and understand factors influencing human development</p> <p>SO1.3 understand maturation</p> <p>SO1.4 understand reflex test</p> <p>SO1.5 understand about senses development</p>	<p>1.Aspects: Physical,</p> <p>2.Motor,</p> <p>3.Sensory</p> <p>4.Biological, Environmental, Inherited</p> <p>5.Proximo – Distal Centro – Lateral, Mass To Specific Pattern</p>	<p>1. General principles of Human development & maturation</p> <p>1.1 Aspects: Physical,</p> <p>1.2 Motor,</p> <p>1.3 Sensory,</p> <p>1.4 Cognitive,</p> <p>1.5 Emotional,</p> <p>1.6 Cultural, Social</p> <p>1.7 Factors Influencing Human Development & Growth:</p> <p>1.8 Biological, Environmental, Inherited</p> <p>1.9 Biological, Environmental, Inherited</p> <p>1.10 Biological, Environmental, Inherited</p> <p>1.11 Principles Of Maturation - In General And Anatomical Directional Pattern Cephalo – Caudal,</p> <p>1.12 Principles Of Maturation - In General And Anatomical Directional Pattern Cephalo – Caudal</p> <p>1.13 Principles Of Maturation - In General And Anatomical Directional Pattern Cephalo – Caudal</p> <p>1.14 Proximo – Distal Centro – Lateral, Mass To Specific Pattern,</p> <p>1.15 Proximo – Distal Centro – Lateral, Mass To Specific Pattern</p>	<p>Learn the key points REFLEX</p> <p>1- Principle of MATURATION</p>

		1.16 Proximo – Distal Centro – Lateral, Mass To Specific Pattern 1.17 Gross To Fine Motor Development 1.18 Reflex Maturation Tests 1.19 Reflex Maturation Tests 1.20 Development In Specific Fields: 1.21 Oromotor Development 1.22 Sensory Development, 1.23 Neurodevelopment Of Hand Function 1.24 Neurodevelopment Of Hand Function	
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SW-1 Suggested Sectional Work

(SW): Assignments:

**Maturat
ion table**

Mini

Project:

Reflex action

Other Activities (Specify):

Reflex maturation tests

121BPT36.2: Apply concepts regarding the electro diagnosis therapeutic current as a tool for electro diagnosis

Hours

Item	AppXHrs
CI	24
LI	08
SW	02
SL	02
Total	36

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO2.1 To Understand Bioelectricity-Physiology</p> <p>SO2.2 To learn about Therapeutic current</p> <p>SO2.3 learn and understand Analysis in Normal and Pathological conditions</p> <p>SO2.4 learn about E.M.G. instrumentation</p> <p>SO2.5 Principles of Electro myography, motor unit – Normal characteristics-activity</p>	<p>1.ncv, 2.emg</p>	<p>Unit-2: Electrodiagnosis Therapeutic current-as a tool for electrodiagnosis. Physiological principles, use of alternating & direct currents</p> <p>2.1 Bioelectricity-Physiology Of Generation</p> <p>2.2 Propagation Of Action Potential,</p> <p>2.3 Volume Conduction</p> <p>2.4 Therapeutic Current-As A Tool For Electrodiagnosis 3</p> <p>2.5 . Physiological Principles,</p> <p>2.6 Use Of Alternating & Direct Currents In Electro- Diagnosis Such As Sensory & Pain Threshold,</p> <p>2.7 Pain Tolerance,-</p> <p>2.8 Short & Long Pulse Test,</p> <p>2.9 S.D. Curves,</p> <p>2.10 Chronaxie & Rheobase,</p> <p>2.11 Accommodation Ratio</p> <p>2.12 Surface And Needle Electromyography,</p> <p>2.13 Nerve Conduction Velocity Test (Motor And Sensory)</p> <p>2.14 ,Reflex Study, Late Responses =</p> <p>2.15 H' And _F' Waves,</p> <p>2.16 Cerebral Evoked Potential,</p> <p>2.17 Analysis In Normal And Pathological Conditions</p> <p>2.18 E.M.G. Instrumentation, Basic Components,</p> <p>2.19 Panel Diagram, Types Of Electrodes</p>	<p>1. General introduction of therapeutic current.</p> <p>2. Learn about ncv, emg,</p>

		2.20 Principles Of Electro-Myography, 2.21 Motor Unit –Normal Characteristics 2.22 Activity At Rest, 2.23 Recruitment/Freque Pattern At Minimalactivity 2.24 Interference Pattern	
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SW-1 Suggested Sectional Work (SW):

Assignments:

S.D. curves, Chronaxie & Rheobase, accommodation ratio

Mini Project:

Surface and Needle Electromyography, Nerve conduction velocity Test (Motor and Sensory),

Reflex Study, late responses

Other Activities (Specific)

H' and _F' Waves

121BPT36.3: Learn the basic concepts of the assessment of neurological dysfunction and interpretation of electro diagnostic findings.

Hours

Item	AppXHrs
CI	24
LI	08
SW	02
SL	02
Total	36

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO3.1 To Understand higher function</p> <p>SO3.2 To learn about abnormal movement.</p> <p>SO3.3. To learn about dermatome myotome</p> <p>SO3.4 understand neural control of bladder.</p> <p>SO3.5 . Scales: FRT, Berg's Balance, modified Ashworth, Glasgow Coma, TUG, FIM 4. Functional Diagnosis using International Classification of Function, Disability & Health (I.C.F)</p>	<p>1.assessment of neurological dysfunction.</p> <p>2. co-ordination tests ,</p> <p>3. balance, posture,</p> <p>4. gait,</p> <p>5. Neural control of bladder,</p>	<p>Unit-3 Assessment of Neurological dysfunctions Interpretation of electro diagnostic findings, routine biochemical investigations</p> <p>3.1 Higher functions,</p> <p>3.2 cranial nerves,</p> <p>3.3 sensations & sensory organization, body image,</p> <p>3.4 Muscle tone,</p> <p>3.5 Voluntary movement and voluntary control tests (isolated and skilled), Abnormal movements –</p> <p>3.6 Clonus,</p> <p>3.7 Tremor,</p> <p>3.8 Chorea,</p> <p>3.9 Athetosis ,</p> <p>3.10 Reflexes:</p> <p>3.11 superficial & deep,</p> <p>3.12 Primitive Reflexes,</p> <p>3.13 muscle strength</p> <p>3.14 Myotomes and Dermatomes,</p> <p>3.15 Upper motor and lower motor neuron lesions ,</p> <p>3.16 Nerve entrapments,</p> <p>3.17 Test for disorder of programme (i.e. cerebellum basal ganglia lesions)</p>	<p>1. Higher functions,</p> <p>2. Myotomes and Dermatomes</p>

		<p>3.18 co-ordination tests , balance, posture, gait, Neural control of bladder,</p> <p>3.19 Perceptual motor dysfunction</p> <p>3.20 Investigative Methods in Modern Medicine like EEG, MRI, CT Scan</p> <p>3.21 Scales: FRT, Berg's Balance</p> <p>3.22 modified Ashworth,</p> <p>3.23 Glasgow Coma, TUG, FIM</p> <p>3.24 Functional Diagnosis using International Classification of Function, Disability & Health (I.C.F) 5. Interpretation of electro diagnostic findings, routine biochemical Investigations</p>	
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SW-1 Suggested Sectional Work (SW):

Neural control of bladder,

Assignments:

co-ordination tests , balance, posture, gait,

Other Activities (Specify):

Myotomes and Dermatomes

122BPT36.4 Recall the basic concepts the assessment of musculoskeletal dysfunction

Item	Hrs
CI	24
LI	08
SW	02
SL	02
Total	36

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO4.1 To Understand movements</p> <p>SO4.2 To learn about posture and muscle girth</p> <p>SO4.3. To learn about special test</p> <p>SO4.4 measurement of gait parameters.</p> <p>SO4.5. Functional diagnosis using ICF 3. Interpretation of X-ray of extremities</p>	<p>1. muscle girth</p> <p>1. Special test 2. 3.posture</p>	<p>Unit4-Assessment of Musculoskeletal Dysfunction</p> <p>4.1 . Postures</p> <p>4.2 postural disorder ,</p> <p>4.3Tightness, deformity,</p> <p>4.4ROM</p> <p>4.5 joint mobility,</p> <p>4.6 muscle strength</p> <p>4.7 endurance</p> <p>4.8muscle girth,</p> <p>4.9 pelvic inclination,</p> <p>4.10limblength ,</p> <p>4.11segmental Measurement of body part (femur, tibia etc.),</p> <p>4.12trick movement</p> <p>4.13special tests,</p> <p>4.14Angle of scoliotic curve ,</p> <p>4.15 Gait analysis in pathological conditions</p> <p>4.16measurement of gait parameters</p> <p>4.17.Functional diagnosis using ICF</p> <p>4.18Interpretation of X-ray of extremities</p> <p>4.19 spine,</p> <p>4.20routine</p> <p>4.21bio-chemical investigations,</p> <p>4.22CT</p> <p>4.23 scan,</p> <p>4.24 MRI</p>	<p>1. Joint ROM</p> <p>2. Move ments</p> <p>Special test</p>

SW-1 Suggested Sectional Work

(SW): Assignments:

Special test

Mini Project:

Muscle girth,
gate analysis

Other Activities

(Specify):

movements

121BPT36.5: Relate the basic idea of cardiopulmonary, posture, pelvic floor muscle strength, obesity

Item	Hrs
CI	24
LI	08
SW	02
SL	02
Total	36

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO5.1 To Understand Posture (recumbent, erect orthopnoeic)</p> <p>SO5.2 To learn about , Breathing pattern and breath hold (rate, rhythm, use of accessory muscle) Chest deformity.</p> <p>SO5.3. Heart rate, blood pressure, heart sounds, pulse rate (volume and pressure) 4. Exercise Tolerance: six minutes walk test, theoretical bases of Bruce’s protocol, step test</p> <p>8. Ankle Brachial Index, tests for peripheral arterial & venous circulation</p> <p>9.</p> <p>SO5.4 . Interpretation of X-ray chest, routine bio-chemical investigations, ABG, PFT, ECG (normal values) F. Assessment of pelvic floor muscle strength and function:- Digital evaluation of Vagina, Perineometer, Pad Test</p> <p>SO5. Indication and Contraindication of Techniques. Assessment of Mobility In Bed Transfer, Ambulation</p>	<ol style="list-style-type: none"> Demonstrate starting positions Soft tissue manipulation Chest Deformity, Cough Sputum, Tactile And Vocal Fremitus 	<p>Unit-5 cardiopulmonary, posture, pelvic floor muscle strength, obesity</p> <p>5.1. Posture (Recumbent, Erect Orthopnoeic) Vital Parameters</p> <p>5.2, Breathing Pattern Breath Hold (Rate, Rhythm, Use Of Accessory Muscle)</p> <p>5.3 Chest Deformity, Cough</p> <p>5.4 Sputum, Tactile And Vocal Fremitus</p> <p>5.5, Mobility Of Thoracic Spine And Rib Cage, Percussion</p> <p>5.6 Chest Expansion Measurements</p> <p>5.7, Breath Holding Test Breath Sounds,</p> <p>5.8, Rate Of Perceived Exertion (RPE),</p> <p>5.9 Peak Flow Rate, Measurement Of Lungs Volumes And Lung Capacities</p> <p>5.10, Blood Gas Level, Importance Of Fundamental And Derived Types</p> <p>5.11 Heart Rate, Blood Pressure, Heart Sounds Pulse Rate (Volume And Pressure)</p> <p>5.12, Exercise Tolerance: Six Minutes Walk Test Theoretical Bases Of Bruce’S Protocol, Step Test</p> <p>5.13 Ankle Brachial Index, Tests For Peripheral Arterial & Venous Circulation</p> <p>5.15 Cardiac Efficiency Tests: ECHO, Ultra-Sonography, Clinical Monitoring, Stress ECG Treadmill And Ergometry.</p> <p>5.16 Functional Diagnosis Using ICF Soft Interpretation Of X-Ray Chest, Routine Bio-Chemical Investigations, ABG, PFT, ECG (Normal Values</p> <p>5.17 Assessment Of Pelvic Floor</p>	<ol style="list-style-type: none"> posture, heart rate, vital p[arameters Exercise tolerance test Ankle brachial index

		<p>Muscle Strength And Function:- Digital Evaluation Of Vagina, Perineometer, Pad Test</p> <p>5.18 Assessment Of Pelvic Floor Muscle Strength And Function:- Digital Evaluation Of Vagina, Perineometer, Pad Test G .</p> <p>5.19, Assessment Of Pain 1. Intensity & Quality 2. Objective Assessment & Documentation: VAS, Numerical Rating Scale</p> <p>5.20Other Scales H. Assessment Of Hand 1. Sensations, Mobility Of Joints, Strength 2. Special Tests 3. Hand Function: Precision & Power Grips</p> <p>5.21, Assessment Of Obesity Classificationassessment – BMI, Waist Circumference, Waist – Hip Ratio</p> <p>5.22 Functional Evaluation: 1.Mobility In Bed- Transfer, Ambulation</p> <p>5.23 Personal Care – Eating, Dressing, Washing, Bathing 3.House Hold Jobs 4.</p> <p>5.24 Work And Recreation</p>	
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SW-1 Suggested Sectional Work

(SW): Assignments:

Posture , breathing pattern

Mini Project:

Assessment of pelvis,
hand, obesity

Other Activities

(Specify): Functional
evaluation

Brief of Hours suggested for the Course Outcome

Course Outcomes	Class Lecture (CI)	Sessional Work (SW)	Self-Learning (SI)	Total hour (CI+SW+SI)
121BPT36.1: Define introduce general principles of human development & maturation	24	02	02	28
121BPT36.2: Explain the overview of the electro diagnosis therapeutic current as a tool for electrodiagnosis	24	02	02	28
121BPT36.3: Illustrate the concept of assessment of neurological dysfunction and interpretation of electradiagnostic findings.	24	02	02	28
121BPT36.4: Analyze the significance of assessment of musculoskeletal dysfunction	24	02	02	28
121BPT36.5: Evaluate the cardiopulmonary, posture, pelvic floor muscle strength, obesity	24	02	02	28
Total Hours	120	10	10	140

**Suggestion for End Semester Assessment
Suggested Specification Table (For ESA)**

CO	Unit Titles	Marks Distribution				Total Marks
		Ap	An	Ev	Cr	
CO-1	Introduce General Principles Of Human Development & Maturation					
CO-2	Overview Of The Electro Diagnosis Therapeutic Current As A Tool For Electrodiagnosis					
CO-3	Assessment Of Neurological Dysfunction And Interpretation Of Electrudiagnostic Findings.					
CO-4	Importance Of Of Assessment Of Musculoskeletal Dysfunction					
CO-5	The Cardiopulmonary, Posture, Pelvic Floor Muscle Strength, Obesity.					
Total						100

Legend: Ap: Apply, An: Analyze, Ev: Evaluate Cr: Create

Note. Detailed Assessment rubric need to be prepared by the course wise teachers for above tasks. Teachers can also design different tasks as per requirement, for end semester assessment.

Suggested Instructional/Implementation Strategies:

1. Improved Lecture
2. Tutorial
3. Case Method
4. Group Discussion
5. Role Play
6. Visit to hospitals
7. Demonstration

Suggested Learning Resources:

(a) Books:

S. No.	Title	Author	Publisher	Edition & Year
1	Physical Rehabilitation Assessment and Treatment	O'Sullivan Schmitz	F.A. Davis Company	2019
2	Physiotherapy for respiratory and cardiac problems	Webber and Pryor	Elsevier	2018
3	Text Book of Physical Diagnosis	Mark M. Swartz	Wolters Kluwer	2019
4	Differential Diagnosis in Physical Therapy	Goodman and Snyder	Elsevier	2020
5	Lecture note provided by Faculty of Medical science, AKS University, Satna .			

Curriculum Development Team

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CO, POs and PSOs Mapping
Program title: B.P.T (Bachelor of physiotherapy)
Course code: 122BPT36

Course title: Physical Evaluation, Diagnosis & Prscription

Course outcomes	Program outcomes												Program specific outcome			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO2	PSO3	PSO4
	Disciplinary knowledge	Psychomotor Skills	Communication skills	Critical thinking	Problem Solving	Analytical reasoning	Research – Related Skills	Co-operation /Team Work	Socio-cultural and multicultural competency	Awareness of moral, ethical and legal issues	Leadership qualities	Ongoing Learning:	Ability to Patient professional care .	Ability to Demonstrate clinical decision patient care	Ability to counsel the patients, family, colleagues and students aspects of physiotherapy treatment.	Ability to Work effectively in various professional collaborative places like hospital.
CO 1: Relate the basic idea of cardiopulmonary, posture, pelvic floor muscle strength, obesity	1	1	2	2	3	2	1	2	2	1	3	2	2	.	3	1
CO2:acquire knowledge regarding the electro diagnosis therapeutic current as a tool for electro diagnosis.	1	1	2	2	1	2	.	2	1	1	2	2	2	.	2	1
CO3 Learn the basic concepts of the assessment of neurological dysfunction and interpretation of electro diagnostic findings.	2	2	1	1	2	2	2	1	2	1	2	1	1	2	2	2
CO4 Recall the basic concepts the assessment of musculoskeletal dysfunction	3	2	2	2	3	2	1	2	2	1	2	2	1	1	3	2
CO5: Relate the basic idea of cardiopulmonary, posture, pelvic floor muscle strength, obesity	.	.	.	1	1	3	.	3	1	1	2	2	1	1	1	3

Legends: 1- Low, 2- Medium, 3- High

Course Curriculum Map:

POs & PSOs No.	COs No.& Titles	SOs No.	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO-1: Define management and able to understand the management school thought	SO1.1 SO1.2 SO1.3 SO1.4 SO1.5	08	Unit-1.0 Introduction of Organization and corporate strategy 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24	02
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO 2 : Explain the overview of planning in management.	SO2.1 SO2.2 SO2.3 SO2.4 SO2.5	08	Unit-2 Overview of Planning 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24	02
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO3 : Illustrate the concept of organizing, staffing, directing and controlling	SO3.1 SO3.2 SO3.3 SO3.4 SO3.5	08	Unit-3 : Organizing and Staffing, Directing and Controlling 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18, 19,20,21,22,23,24	02
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO 4: Analyze the significance of organizational behavior.	SO4.1 SO4.2 SO4.3 SO4.4 SO4.5	08	Unit-4: Importance of organizational Behavior and Emotional Intelligence 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24	02
PO: 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO 5: Evaluate the organizational power and politics	SO5.1 SO5.2 SO5.3 SO5.4 SO5.5	08	Unit 5: Organizational Power and Politics. 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24	02

**CURRICULUM
OF
BPT FOURTH YEAR**

Course Code: 122BPT41

Course Title: Community PT, Rehabilitation & Disability prevention

Pre-Requisite: Student should have basic knowledge of diagnosis , assessment and laboratory diagnosis of patients.

Rationale: The student studying BPT should possess to study of Community PT, Rehabilitation & Disability prevention to Promoting health and wellness in communities , enhancing accessibility and equity in healthcare, restoring function and mobility after injury or illness & enhancing quality of life and independence.

Course Outcomes:

Course Code:	122BPT41
Course Title:	Community PT Rehabilitation and Disability Prevention
Course Outcomes:	
122BPT41.1	Find how to introduce general introduction of community PT
122BPT41.2	Apply concepts regarding the general introduction of community medicine
122BPT41.3	Learn the basic concepts of the community PT rehabilitation and disability prevention theory.
122BPT41.4	Recall the basic concepts the general introduction of occupational therapy, CBR, health care delivery system
122BPT41.5	Relate the basic idea of the orthotic and prosthetic

Scheme of Studies

CODE	Course Code	Course Title	Scheme of studies (Hours/Week)				
			CI	LI	SW	SL	Total Study Hours (CI+LI+SW+SL)
PCC	122BPT41	Community PT, Rehabilitation & Disability prevention	6	0	1	1	8

- Legend:**
- CI:** Classroom Instruction (Includes different instructional strategies i.e. Lecture (L) and Tutorial (T) and others),
 - LI:** Laboratory Instruction (Includes Practical performances in laboratory workshop, field or other locations using different instructional strategies)
 - SW:** Sessional Work (includes assignment, seminar, mini project etc.),
 - SL:** Self Learning,

Note: SW & SL has to be planned and performed under the continuous guidance and feedback of teacher to ensure outcome of Learning.

Scheme of Examination

Theory

CODE	Course Code	Course Title	Internal Assessment		University Examination			Total
			Theory	Practical	Theory	Viva	Practical	
PCC	122BPT41	Community PT, Rehabilitation & Disability prevention	20	-	80	-	-	100

Course-CurriculumDetailing:

This course syllabus illustrates the expected learning achievements, both at the course and session levels, which students are anticipated to accomplish through various modes of instruction including Classroom Instruction (CI), Laboratory Instruction (LI), Sessional Work (SW), and Self Learning (SL). As the course progresses, students should showcase their mastery of Session Outcomes (SOs), culminating in the overall achievement of Course Outcomes (COs) upon the course's conclusion.

122BPT41.1 Find how to introduce general introduction of community PT

Hours

Item	Hrs
CI	32
LI	00
SW	02
SL	01
Total	35

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO1.1 Understand Aims and objectives of study of pathology</p> <p>SO1.2 Understand the Concept of Diseases, Classification of Lesions.</p> <p>SO1.3 Analysis of Concept of Diseases, Classification of Lesions.</p> <p>SO1.4 Analysis of Brief concepts of inflammation and Repair, Degeneration, Necrosis and Gangrenes. Inflammation : Definition, vascular and cellular phenomenon, differences between transudate and exudate , granuloma</p> <p>SO1.5 Application of Deficiency Diseases vitamin A, vitamin B, vitamin C, vitamin D..</p>		<p>UNIT-1.0 GENERAL INTRODUCTION COMMUNITY PT</p> <p>1.1 General Concepts of health and diseases</p> <p>1.2 reference to natural history of disease</p> <p>1.3 pre-pathogenic phase</p> <p>1.4 pathogenic phase.</p> <p>1.5 The role of socio-economic and cultural environment in health and disease.</p> <p>1.6 The role of socio-economic and cultural environment in health and disease.</p> <p>1.7 The role of socio-economic and cultural environment in health and disease.</p> <p>1.8 The role of socio-economic and cultural environment in health and disease.</p> <p>1.9 Epidemiology</p> <p>1.10 scope.</p> <p>1.11 Role of Epidemiological investigation in public health,</p> <p>1.12 Public Health Administration — Overall view of the health administration setup at Central State and Local self-government levels.</p> <p>1.13 Role of Non-Government Organisations in public health care delivery system.</p>	<p>1. Degeneration,</p>

		<p>1.14 The National Health Programmes — Highlighting the role of social, The</p> <p>1.15 National Health Programmes economic and cultural factors in the implementation of the National Programmes,</p> <p>1.16 Primary Health Care, objectives and implementation.</p> <p>1.17 Health Problems of vulnerable groups Pregnant</p> <p>1.18 Health Problems of vulnerable groups Lactating women Infants</p> <p>1.19 Health Problems of vulnerable groups Pre- school children,</p> <p>1.20 Occupational groups (see below)</p> <p>1.21 Health Problems of vulnerable groups Geriatrics</p> <p>1.22 Occupational Health:</p> <p>1.23 Occupational Health Definition,</p> <p>1.24 Occupational Health scope,</p> <p>1.25 occupational diseases</p> <p>1.26 prevention of occupational diseases</p> <p>1.27 hazards. Role of E S In occupational health of industrjal workers.</p> <p>1.28 Social security</p> <p>1.29 other measures for the protection of occupational hazards,</p> <p>1.30 accidents and diseases.</p> <p>1.31 Details of Factory Act, Environmental</p> <p>1.32 safety and Compensation acts, ESI Acts</p>	
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SW-1 Suggested Sectional Work (SW):

Assignments:

Inflammation And Repair, Degeneration, Necrosis

Mini Project:

Transudate And Exudate , Granuloma.

Other Activities (Specify):

Deficiency Diseases vitamin A, vitamin B, vitamin C, vitamin.

122BPT41.2: Apply concepts regarding the general introduction of community medicine

Hours

Item	Hrs
CI	32
LI	00
SW	02
SL	01
Total	35

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO2.1 To Understand Vascular disturbances: Oedema, Thrombosis, Embolism, Hemorrhage and Shock.</p> <p>SO2.2 To learn about Blood Disorder: Anemia, Leukemia, Hemorrhagic disorders</p> <p>SO2.3 Application of Neoplasia</p> <p>SO2.4 Application of Respiratory system diseases</p> <p>SO2.5 Analysis of Cardiovascular system disease</p>	NA.	<p>UNIT-2 GENERAL INTRODUCTION COMMUNITY MEDICINE</p> <p>2.1 Family Welfare Programme</p> <p>2.2 Objectives of National Family Welfare Programme</p> <p>2.3 Family Planning Methods.</p> <p>2.4 A general idea of advantages and disadvantages of methods Reproductive Child Health Services,</p> <p>2.5 A general idea of advantages and disadvantages of methods Reproductive Child Concept of planed pregnancies,</p> <p>2.6 population dynamics.</p> <p>2.7 Mental Health</p> <p>2.8 Community aspects of Mental Health:</p> <p>2.9 Role of Physiotherapists in Mental Health Problems</p> <p>2.10 Role of Physiotherapist in Mental Health Problems such as Cerebral Palsy</p> <p>2.11 Role of Physiotherapist in Mental retardation etc.</p> <p>2.12 Communicable diseases</p> <p>2.13 Diseases transmission concepts,</p> <p>2.14 an overall view of communicable diseases Malaria,</p> <p>2.15 an overall view of communicable diseases Filaria,</p> <p>2.16 an overall view of communicable diseases Tuberculosis,</p> <p>2.17 an overall view of communicable diseases Leprosy,</p>	<p>1. Anemia, Leukemia, Hemorrhagic disorders</p>

		<p>2.18 an overall view of communicable diseases Poliomyelitis,</p> <p>2.19 an overall view of communicable diseases Malaria Viral Encephalitis</p> <p>2.20 classified according to principal mode of transmission,</p> <p>2.21 Role of Insects and other Vectors in disease transmission.</p> <p>2.22 Control and prevention of communicable diseases,</p> <p>2.23 universal immunization programme,</p> <p>2.24 Programmes such as ARI,</p> <p>2.25 Diarrhoea and Polio Control Programmes.</p> <p>2.26 International Health Agencies and National NGOs.</p> <p>2.27 Non-communicable diseases,</p> <p>2.28 Blindness, Accidents,</p> <p>2.29 Cancer, IHD, Hypertension, Stroke (CVA).</p> <p>2.30 Vital and health statistics — Basic concepts,</p> <p>2.31 Morbidity and Mortality rates, Period, Age and Cause of specific death rates</p> <p>2.32 role of these rates as indicators of health and diseases.</p>	
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SW-1 Suggested Sectional Work (SW):

Assignments: Neoplasia: Brief overview of Tumors, Definition, Classification.

Mini Project: Respiratory system diseases- Etio-pathogenesis, gross pathology of conditions.

Other Activities (Specify):

Cardiovascular system: – Etio-pathogenesis, gross pathology of conditions

122BPT41.3: LEARN THE BASIC CONCEPTS OF THE COMMUNITY PT REHABILITATION AND DISABILITY PREVENTION THEORY

Item	Hrs
CI	32
LI	00
SW	02
SL	01
Total	35

Session Out comes(SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>So3.1 to understand the introduction of rehabilitation</p> <p>So3.2 to learn about disability</p> <p>So3.3. To learn about communication disorder</p> <p>So3.4 application of role of p[hysiotherapy in rehabilitation</p> <p>So3.5 analysis of psychosocial & vocational aspect of rehabilitation</p>	NA	<p>UNIT3COMMUNITY PT REHABILITATION & DISABILITY PREVENTION THEORY</p> <p>3.1 Introduction of Rehabilitation & History</p> <p>Introduction of Rehabilitation & History</p> <p>Introduction of Rehabilitation & History</p> <p>3.2. Epidemiology of disability</p> <p>3.3. Epidemiology of disability</p> <p>3.4. Epidemiology of Impairment,</p> <p>3.5. Epidemiology of Impairment</p> <p>3.6. phases of disability process</p> <p>3.7. phases of disability process</p> <p>3.8. Principles of Rehabilitation</p> <p>3.9. Principles of Rehabilitation</p> <p>3.10.concept of team approach with rolls of each individual participant.</p> <p>3.11.concept of team approach with rolls of each individual participant</p> <p>3.12. Organization of Rehabilitation unit.</p> <p>3.13. Organization of Rehabilitation unit.</p> <p>3.14. Organization of Rehabilitation unit.</p> <p>3.15. Disability prevention evaluation & principles of Rehabilitation Management</p> <p>3.16. Disability prevention evaluation & principles of Rehabilitation Management.</p> <p>3.17. Disability prevention evaluation & principles of Rehabilitation Management</p> <p>3.18. Disability prevention evaluation & principles of Rehabilitation Management</p>	<p>1. Liver – Hepatitis, Cirrhosis and Hepatoma</p>

		<p>3.19.Role of Physiotherapy in Rehabilitation Prevention</p> <p>3.20.Role of Physiotherapy in Rehabilitation Prevention</p> <p>3.21. Role of Physiotherapy in treatment</p> <p>3.22.Role of Physiotherapy in treatment</p> <p>3.23.Role of Physiotherapy in restoration</p> <p>3.24.Brief outline of Communication disorder</p> <p>3.25.Brief outline of Communication disorder</p> <p>3.26.implications on Rehabilitation process</p> <p>3.27.implications on Rehabilitation process.</p> <p>3.28.implications on Rehabilitation process</p> <p>3.29. Brief outline of psychosocial aspects of Rehabilitation</p> <p>3.30. Brief outline of psychosocial aspects of Rehabilitation</p> <p>3.31.</p> <p>3.32. Brief outline of & ocational aspects of Rehabilitation</p>	
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SW-1 Suggested Sectional Work (SW):

Assignments:

Nephrotic syndrome, Nephritis, Glomerulonephritis

Mini Project:

Poliomyelitis, Myopathies, Volkman's ischemic contracture. Skin – Scleroderma, Psoriasis,

Other Activities (Specify):

Autoimmune disorders.

**122BPT41.4: RECALL THE BASIC CONCEPTS THE GENERAL INTRODUCTION
OCCUPATIONAL THERAPY, CBR, HEALTH CARE DELIVERY SYSTEM**

Hours

Item	AppXHrs
CI	32
LI	00
SW	02
SL	01
Total	35

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO4.1 To Understand Introduction of occupational therapy.</p> <p>SO4.2 To learn about community medicine</p> <p>SO4.3. To learn Assessment of disability in rural & urban setups. Health care delivery system</p> <p>SO4.4 Application of physiotherapy skill at community level</p> <p>SO4.5 Analysis of Strategies to improve ADL, Rehabilitation program for various neuro-musculoskeletal and cardiothoracic disabilities</p>		<p>UNIT-4 GENERAL INTRODUCTION OF OCCUPATIONAL THERAPY, CBR, HEALTH CARE DELIVERY SYSTEM</p> <p>4.1 Introduction to Occupational therapy.</p> <p>4.2 Activities of daily living,</p> <p>4.3 functional assessment & training for functional independence.</p> <p>4.4 Brief outline of basic community medicine with special reference to community based Rehabilitation,</p> <p>4.5 nrastructure and role of CBR</p> <p>4.6 Assessment of disability in rural & urban setups.</p> <p>4.7 Health care delivery system & preventive measures with specific reference to disabling conditions.</p> <p>4.8 Community education program.</p> <p>4.5.Application of Physiotherapy skills at community level with special reference to the need at rural level.</p> <p>4.6 Role of voluntary Organizations in CBR:</p> <p>4.7 Charitable Organizations, Voluntary health agencies</p> <p>4.8 National level and International NGO's,</p> <p>4.9 Multilateral and Bilateral agencies.</p> <p>4.10 International Health Organizations</p> <p>4.11 WHO</p> <p>4.12 UNICEF</p> <p>4.13 UNDP</p> <p>4.14 UNFPA</p> <p>4.15 FAO</p> <p>4.16 ILO, World bank</p> <p>4.17 USAID,</p> <p>4.18 SIDA,</p> <p>4.19 DANIDA, Rockfeller,</p> <p>4.20 Ford foundation,</p> <p>4.21 CARE, RED CROSS</p>	<p>1. Activities of daily living, functional assessment</p>

		4.22 National District Level Rehabilitation Program: 4.23 Primary rehabilitation unit, Regional training center, 4.24 District rehabilitation center, Primary Health center, 4.25 Village rehabilitation worker, 4.26 Anganwadi worker. 4.27 Role of Physiotherapy in CBR: 4.28 Screening for disabilities, 4.29 Prescribing exercise program, 4.30 Prescribing and devising low cost locally available assistive aids, 4.31 Modifications physical and architectural barriers for disabled, Disability prevention, 4.32 Strategies to improve ADL, Rehabilitation program for various neuro- musculoskeletal and cardiothoracic disabilities	
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SW-1 Suggested Sectional Work (SW):

Assignments:

International Health Organization

Mini Project:

Occupational therapy.

Other Activities (Specify):

Disability prevention.

122BPT41.5: RELATE THE BASIC IDEA OF THE ORTHOTIC AND PROSTHETIC

Hours

Item	Hrs
CI	32
LI	00
SW	02
SL	01
Total	35

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO5.1 To Understand Introduction to brace fitting</p> <p>SO5.2 To learn about prescribing Prosthetic and Orthotic devices.</p> <p>SO5.3 To learn about Spinal, Lower limb, and Upper limb Prosthetic and Orthotic devices</p> <p>SO5.4 Application of Checkout, usage advice, precautions, and follow-up Prosthetic and Orthotic devices:</p> <p>SO5.5 Analysis of Walking aids and wheel chairs</p>		<p>Unit-5 ORTHOTICS AND PROSTHETICS</p> <p>5.1Introduction to surgical anatomy</p> <p>5.2various pathological deviations with respect to brace fitting.</p> <p>5.3Rationale of prescribing Prosthetic</p> <p>5.4Orthotic devices.</p> <p>5.5Types of Prosthetic</p> <p>5.6 Types of Orthotic devices Spinal</p> <p>5.7Types of Orthotic devices Spinal</p> <p>5.8Types of Orthotic devices Spinal</p> <p>5.9Types of Orthotic devices Lower limb</p> <p>5.10Types of Orthotic devices Lower limb</p> <p>5.11Types of Orthotic devices Lower limb</p> <p>5.12Types of Orthotic devices Lower limb</p> <p>5.13Types of Orthotic devices Upper limb.</p> <p>5.14Types of Orthotic devices Upper limb</p> <p>5.15Types of Orthotic devices Upper limb</p> <p>5.16Types of Orthotic devices Upper limb</p> <p>5.17Checkout,</p> <p>5.18Checkout</p> <p>5.19Checkout</p> <p>5.20usage advice,</p> <p>5.21usage advice,</p> <p>5.22usage advice,</p> <p>5.23precautions,</p> <p>5.24precautions,</p> <p>5.25precautions,</p> <p>5.26.follow-up.</p> <p>5.27.Walking aids</p> <p>5.28Walking aids</p> <p>5.29Walking aids</p> <p>5.30wheel chairs:</p> <p>5.31. usage advice,</p> <p>5.32 follow-up..</p>	<p>1. Prescribing Prosthetic and Orthotic devices.</p>

SW-1 Suggested Sectional Work
(SW): Assignments: Rationale of
prescribing Prosthetic and Orthotic
devices

Mini Project:
Checkout, usage
advice. **Other**

Activities

(Specify):

Walking aids and
wheel chairs

Brief of Hours suggested for the Course Outcome

Course Outcomes	Class Lecture (CI)	Sessional Work (SW)	Self-Learning (SI)	Total hour (CI+SW+SI)
122BPT41.1: Define introduction of general introduction of community PT	32	02	1	35
122BPT41.2 Explain the general introduction of community medicine	32	02	1	35
BPT41.3: Illustrate the concept of the community PT rehabilitation and disability prevention theory.	32	02	1	35
122BPT41.4: Analyze the general introduction of occupational therapy , CBR, health care delivery system	32	02	1	35
122BPT41.5: Evaluate the orthotic and prosthetic	32	02	1	35
Total Hours	160	10	05	175

**Suggestion for End year Assessment
Suggested Specification Table (For ESA)**

CO	Unit Titles	Marks Distribution				Total Marks
		Ap	An	Ev	Cr	
CO-1	Introduce general introduction of community PT					
CO-2	General introduction of community medicine					
CO-3	Community PT rehabilitation and disability prevention theory.					
CO-4	General introduction of occupational therapy , CBR, health care delivery system					
CO-5	Orthotic and prosthetic					
Total						20

Legend: **Ap: Apply,** **An: Analyze,** **Ev: Evaluate** **Cr: Create**

Note. Detailed Assessment rubric need to be prepared by the course wise teachers for above tasks. Teachers can also design different tasks as per requirement, for end semester assessment.

Suggested Instructional/Implementation Strategies:

1. Improved Lecture
2. Tutorial
3. Case Method
4. Group Discussion
5. Role Play
6. Visit to hospitals
7. Demonstration

Suggested Learning Resources:

(a) Books:

S. No.	Title	Author	Publisher	Edition & Year
1	Fundamental of Management	Textbook of Preventive and Social Medicine by Dr J E Park.	Pearson Education	2009
2	Management Theory and Applications	Rehabilitation medicine -- by Joel A. Delisa	Cengage Learning,India	2009
3	Management Principles and Applications	Text book of physical diagnosis - -- by Mark .M Swartz	Cengage Learning,India	First Edition
4	Essentials of Management	Physical Rehabilitation ---- by Susan B O'Sullivan , Thomas J Schmitz , George Fluke	New Delhi, TMHi	2006
5	Lecture note provided by Faculty of medical science, AKS University, Satna .			

Curriculum Development Team

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6. Dr. R.M. Sharma, Professor , Department of paramedical science

CO, POs and PSOs Mapping
Program title: B.P.T (Bachelor of physiotherapy)
Course code: 122BPT41

Course title: COMMUNITY PT, REHABILITATION & DISABILITY

Course outcomes	Program outcomes												Program specific outcome			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO2	PSO3	PSO4
	Disciplinary knowledge	Psychomotor Skills	Communication skills	Critical thinking	Problem Solving	Analytical reasoning	Research – Related Skills	Co-operation /Team Work	Socio-cultural and multicultural competency	Awareness of moral, ethical and legal issues	Leadership qualities	Ongoing Learning:	Ability to Patient professional care .	Ability to Demonstrate clinical decision patient care	Ability to counsel the patients, family,colleagues and students aspects of physiotherapy treatment.	Ability to Work effectively in various professional collaborative places like hospital.
CO1: Find how to introduce general introduction of community PT	2	2	1	1	2	2	2	1	2	1	2	1	1	2	2	2
co2: Apply concepts regarding the general introduction of community medicine	2	2	1	1	2	2	2	1	2	1	2	1	1	2	2	2
co3: Learn the basic concepts of the community PT rehabilitation and disability prevention theory..	2	2	1	1	2	2	2	1	2	1	2	1	1	2	2	2
CO4:Recall the basic concepts the general introduction of occupational therapy , CBR, health care delivery system	3	2	2	2	3	2	3	2	2	1	2	3	1	3	3	2
CO5:Relate the basic idea of the orthotic and prosthetic	3	2	2	2	3	2	3	2	2	1	2	3	1	3	3	2

Legends: 1- Low, 2- Medium, 3- High

Course Curriculum Map

POs & PSOs No.	COs No.& Titles	SOs No.	Laboratory Instruction (LI)	Classroom Instruction(CI)	Self Learning (SL)
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO1: Define introduction of general introduction of community PT	SO1.1 SO1.2 SO1.3 SO1.4 SO1.5	00	Unit-1. GENERAL INTRODUCTION COMMUNITY PT 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32	02
PO 1,2,3,4,5,6,7,8, PSO 1,2, 3, 4	CO2: Explain the general introduction of community medicine	SO2.1 SO2.2 SO2.3 SO2.4 SO2.5	00	Unit-2 GENERAL INTRODUCTION COMMUNITY MEDICINE 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32	02
PO 1,2,3,4,5,6,7,8, PSO 1,2, 3, 4	CO3: Illustrate the concept of the community PT rehabilitation and disability prevention theory	SO3.1 SO3.2 SO3.3 SO3.4 SO3.5	00	unit-3 : community,pt rehabilitation & disability prevention theory 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32	02
PO 1,2,3,4,5,6,7,8, PSO 1,2, 3, 4	CO4: Analyze the general introduction of occupational therapy , CBR, health care delivery system	SO4.1 SO4.2 SO4.3 SO4.4 SO4.5	00	Unit-4 general introduction of occupational therapy,cbr, health care delivery system 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32	02
PO: 1,2,3,4,5,6,7,8, PSO 1,2, 3, 4	CO5: : Evaluate the orthotic and prosthetic	SO3.1 SO3.2 SO3.3 SO3.4 SO3.5	00	Unit 5: Systemic Microbiology. 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32	02

YEAR IV

Course Code: 122BPT42

Course Title: Research methodology & Biostatistics

Pre-Requisite: Student should have basic knowledge of Data collection for research data and sampling.

Rationale: The student studying BPT should possess to study of The student studying BPT should possess to study of Research methodology is a structured and scientific approach used to collect, analyze, and interpret quantitative or qualitative data to answer research questions or test hypotheses.

Course Outcomes:

Course Code:	122BPT42
Course Title:	Research methodology & Biostatistics
Course Outcomes:	
122BPT42.1	Find how to introduce of research methodology and research problem
122BPT42.2	Apply concepts regarding the research design, measurement and scaling technique
122BPT42.3	Learn the basic concepts of the data collection and computer technology
122BPT42.4	Recall the basic concepts the introduction of biostatistics
122BPT42.5	Relate the basic idea of correlation, regression, hypothesis, annova and sampling

Scheme of Studies

CODE	Course Code	Course Title	Scheme of studies (Hours/Week)				
			CI	LI	SW	SL	Total Study Hours (CI+LI+SW+SL)
PCC	122BPT42	Research methodology & Biostatistics	3	0	1	1	5

- Legend:** **CI:** Classroom Instruction (Includes different instructional strategies i.e. Lecture (L) and Tutorial (T) and others),
LI: Laboratory Instruction (Includes Practical performances in laboratory workshop, field or other locations using different instructional strategies)
SW: Sessional Work (includes assignment, seminar, mini project etc.),
SL: Self Learning,

Note: SW & SL has to be planned and performed under the continuous guidance and feedback of teacher to ensure outcome of Learning.

Scheme of Examination

Theory

CODE	Course Code	Course Title	Internal Assessment		University Examination			Total
			Theory	Practical	Theory	Viva	Practical	
PCC	122BPT 42	Research methodology & Biostatistics	20	00	80	00	00	100

122BPT42.1: Find how to introduce of research methodology and research problem
Hours

Item	Hrs
CI	20
LI	00
SW	02
SL	01
Total	23

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO1.1 To Understand Basic Introduction to Research methodology:</p> <p>SO1.2 To learn about Research methods vs. methodology</p> <p>SO1.3 To learn about Criteria for good research</p> <p>SO1.4 Application of Research problem</p> <p>SO1.5 Analysis of objectives of research problem</p>		<p>Unit-1 INTRODUCTION TO RESEARCH METHODOLOGY, RESEARCH PROBLEM</p> <p>1.1 Introduction to Research methodology: 1.2 Introduction to Research methodology 1.3 Meaning of research, 1.4 Meaning of research 1.5 objectives of research, 1.6 Motivation in research 1.7 Types of research 1.8 Types of research 1.9 Types of research 1.10 research approaches 1.11 research approaches, 1.12 Research methods vs. methodology, 1.13 Research methods vs. methodology 1.14 Criteria for good research. 1.15 Criteria for good research 1.16 Research problem: 1.17 Statement of research problem, 1.18 Statement of purpose 1.19 objectives of research problem, 1.20 Necessity of defining the problem</p>	<p>1</p> <p>1. Research methods vs. methodology 2. Criteria for good research</p>

SW-1 Suggested Sectional Work

(SW):

Assignments:

objectives of research,

Mini Project:

Statement of purpose Research problem

Other Activities

(Specify): objectives of

research problem

122BPT42.2: Apply concepts regarding the research design , measurement and scaling technique

Hours

Item	Hrs
CI	20
LI	00
SW	02
SL	01
Total	23

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO2.1 To Understand Research design</p> <p>SO2.2 To learn about Basic principles of research design</p> <p>SO2.3 To learn Measurement in research Measurement scales</p> <p>SO2.4 Application sources of error in measurement</p> <p>SO2.5 Analysis of Technique of developing measurement tools</p>		<p>UNIT-2 RESEARCH DESIGN AND MEASUREMENT & SCALING TECHNIQUES</p> <p>2.1 Research design: 2.2 Meaning of research design 2.3 Need for research design 2.4 Features for good design, 2.5 Different research designs, 2.6 Different research designs 2.7 Basic principles of research design 2.8 Basic principles of research design. 2.9 Measurement & scaling techniques: 2.10 `Measurement in research 2.11 Measurement scales, 2.12 sources of error in measurement 2.13 sources of error in measurement 2.14 Technique of developing measurement tools 2.15 Meaning of scaling, 2.16 Meaning of scaling 2.17 Its classification, 2.18 Its classification 2.19 Criteria for good research 2.20 Criteria for good research</p>	<p>1 Meaning of research design</p>

SW-1 Suggested Sectional Work

(SW): Assignments:

Need for research design.

Mini Project:

Measurement in research Measurement scales

Other Activities (Specify):

Meaning of scaling

122BPT42.3: Learn the basic concepts of the data collection and computer technology

Approximate

Item	AHrs
CI	20
LI	00
SW	03
SL	02
Total	23

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO3.1 To Understand Principles data collection</p> <p>SO3.2 To learn questionnaires & schedules,</p> <p>SO3.3 To learn about Computer technology</p> <p>SO3.4 Application of Computer application in research computer</p>		<p>UNIT-3 DATA COLLECTION AND COMPUTER TECHNOLOGY</p> <p>3.1 Methods of data collection:</p> <p>3.2 Methods of data collection</p> <p>3.3 Collection of primary data,</p> <p>3.4 Collection of primary data</p> <p>3.5 Collection data</p> <p>3.6 Collection data</p> <p>3.7 Questionnaires</p> <p>3.8 Questionnaires</p> <p>3.9 Schedules</p> <p>3.10 Schedules</p> <p>3.11 Difference between questionnaires & schedules</p> <p>3.12 Difference between questionnaires & schedules.</p> <p>3.13 Computer technology:</p> <p>3.14 Computer technology</p> <p>3.15 Introduction to Computers,</p> <p>3.16 Introduction to Computers,</p> <p>3.17 Computer application in research computers</p> <p>3.18 Computer application in research computers</p> <p>3.19 Researcher.</p> <p>3.20 Researcher</p>	<p>1.Collection of primary data,</p>

SW-1 Suggested Sectional Work

(SW): Assignments:

Methods of data collection

Mini Project:

Collection data through questionnaires & schedules,

Other Activities (Specify):

Introduction to Computers

122BPT42.4: Recall the basic concepts the introduction of biostatistics

Hours

Item	Hrs
CI	20
LI	00
SW	02
SL	01
Total	23

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO4.1 To Understand Principles of neurosurgery</p> <p>SO4.2 To learn about Congenital and Childhood disorders</p> <p>SO4.3 To learn about Trauma, Intra- cranial disorders</p> <p>SO4.4 Application of Head Injury:Etiology,patho physiology,classificat ion,climical sign and symptoms, investigations, medical management,Surgical management and complications</p> <p>SO4.5 Analysis of Brain tumors andSpinal tumors</p>		<p>UNIT-4 INTRODUCTION OF BIOSTATISTICS</p> <p>4.1 Introduction of biostatistics</p> <p>4.2 Meaning,</p> <p>4.3 definition,</p> <p>4.4 Characteristics of statistics.</p> <p>4.5 Importance of the study of statistics,</p> <p>4.6 Branches of statistics,</p> <p>4.7 Statistics and health science</p> <p>4.8 Parameters and Estimates, Variables and their types, Measurement scales.</p> <p>4.9 Tabulation of Data:</p> <p>4.10 Basic principles of graphical representation,</p> <p>4.11 Types of diagrams – histograms, frequency polygons, smooth frequency polygon, cumulative frequency curve, Normal probability curve.</p> <p>4.12 Measures of Central Tendency:</p> <p>4.13 Need for measures of central Tendency,</p> <p>4.14 Definition and calculation of Mean – ungrouped and grouped,</p> <p>4.15 interpretation and calculation of Median-ungrouped and grouped,</p> <p>4.16 Meaning and calculation of Mode, Geometric mean & Harmonic mean,</p> <p>4.17 Guidelines for the use of various measures of central tendency.</p> <p>4.18 Measures of Dispersion: Range, mean deviation, standard deviation & variance.</p> <p>4.19 Probability and Standard Distributions: Meaning of probability of standard distribution, the binominal distribution,</p> <p>4.20 the normal distribution, Divergence from normality – skewness, kurtosis.</p>	<p>1. Statistics and health science</p> <p>2. Tabulation of Data</p> <p>3. Measures of Central Tendency</p>

SW-1 Suggested Sectional Work

(SW): Assignments:

Branches of statistics

MiniProject:

Types of diagrams

histograms,frequency polygons

Other Activities (Specify):

122BPT42.5: Relate the basic idea of correlation, regression ,hypothesis, annova and sampling Hours

Item	Hrs
CI	20
LI	00
SW	02
SL	01
Total	25

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO5.1 To Understand Principles of Correlation & regression</p> <p>SO5.2 To learn about Testing of Hypotheses , Level of significance, Degrees of freedom</p> <p>SO5.3 To learn about 3Chi-square test, test of Goodness of fit & student t-test</p> <p>SO5.4 Application of Analysis of variance & covariance</p> <p>SO5.5 Analysis of Sampling:</p>		<p>UNIT-5 CORRELATION & REGRESSION, HYPOTHESES, ANOVA, SAMPLING</p> <p>5.1 Correlation & regression : Significance,</p> <p>5.2 correlation coefficient,</p> <p>5.3 linear regression & regression equation.</p> <p>5.4 Testing of Hypotheses ,</p> <p>5.5 Level of significance,</p> <p>5.6 Degrees of freedom.</p> <p>5.7 Chi-square test, test of Goodness of fit & student t-test.</p> <p>5.8 Analysis of variance & covariance:</p> <p>5.9 Analysis of variance (ANOVA), what is ANOVA</p> <p>5.10 Basic principle of ANOVA,</p> <p>5.11 ANOVA technique,</p> <p>5.12 Analysis of Co variance (ANACOVA)</p> <p>5.13 Sampling:</p> <p>5.14 Definition, Types-</p> <p>5.15 simple, random stratified,</p> <p>5.16 cluster and double sampling</p> <p>5.17 Need for sampling</p> <p>5.18 Criteria for good samples</p> <p>5.19 Application of sampling in community</p> <p>5.20 Procedures of sampling</p>	<p>1. Testing of Hypotheses</p>

SW-1 Suggested Sectional Work

(SW): Assignments:

Criteria for good samples.

Mini Project:

Application of sampling in community

Other Activities (Specify):

Sampling design

Brief of Hours suggested for the Course Outcome

Course Outcomes	Class Lecture (CI)	Sessional Work (SW)	Self-Learning (SI)	Total hour (CI+SW+SI)
122BPT42.1: Define introduction of research methodology and research problem	20	2	1	23
122BPT42.2: Explain the research design , measurement and scaling technique	20	2	1	23
122BPT42.3: Illustrate the concept of the data collection and computer technology	20	2	1	23
3122BPT42.4: Analyze the basic concepts the introduction of biostatistics	20	2	1	23
122BPT42.5: Evaluate the basic idea of correlation , regression ,hypothesis, annova and sampling	20	2	1	23
Total Hours	100	10	05	115

Suggestion for End Semester Assessment

Suggested Specification Table (For ESA)

CO	Unit Titles	Marks Distribution				Total Marks
		Ap	An	Ev	Cr	
CO-1	introduction of research methodology and research problem					
CO-2	research design , measurement and scaling technique					
CO-3	the concept of the data collection and computer technology					
CO-4	basic concepts the introduction of biostatistics					
CO-5	basic idea of correlation , regression ,hypothesis, annova and sampling					
Total						20

Legend: Ap: Apply, An: Analyze, Ev: Evaluate Cr: Create

Note. Detailed Assessment rubric need to be prepared by the course wise teachers for above tasks.
Teachers can also design different tasks as per requirement, for end semester assessment.

Suggested Instructional/Implementation Strategies:

1. Improved Lecture
2. Tutorial
3. Case Method
4. Group Discussion
5. Role Play
6. Visit to hospitals
7. Demonstration

Suggested Learning Resources:

(a) Books:

S. No.	Title	Author	Publisher	Edition & Year
1	Statistical methods in Biology	Bailey, N.T.J. -	The English universities press, London	1981
2	Methods of Social Survey and Research	Bajpai, S.R.-,	Kitab Ghar, Kanpur	1960
3	Statistics in medicine,	Colton -	Little Brown Company, Boston	1975
4	Statistical methods.	Gupta, S.P -	Sultan Chand and Sons Publishers , New Delhi.	2021
5	Lecture note provided by Faculty of Medical science AKS University, Satna .			

Curriculum Development Team

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4. Dr. Brajesh kumar, Assistant Professor , Department of paramedical science
5. Dr. Poonam Singhariya, Assistant Professor , Department of paramedical science
6. Dr. R.M. Sharma , Professor , Department of paramedical science

CO, POs and PSOs Mapping
Program title: B.P.T (Bachelor of Physiotherapy)
Course code122BPT42

Course title: RESEARCH METHODOLOGY & BIOSTATICS

Course outcomes	Program outcomes												Program specific outcome			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO2	PSO3	PSO4
	Disciplinary knowledge	Psychomotor Skills	Communication skills	Critical thinking	Problem Solving	Analytical reasoning	Research – Related Skills	Co-operation /Team Work	Socio-cultural and multicultural competency	Awareness of moral, ethical and legal issues	Leadership qualities	Ongoing Learning:	Ability to Patient professional care .	Ability to Demonstrate clinical decision patient care	Ability to counsel the patients, family,colleagues and students aspects of physiotherapy treatment.	Ability to Work effectively in various professional collaborative places like hospital.
CO1: Find how to introduce of research methodology and research problem	3	2	2	2	3	2	3	2	2	1	2	3	1	3	3	2
co2: Apply concepts regarding the research design , measurement and scaling technique	3	2	2	2	3	2	3	2	2	1	2	3	1	3	3	2
co3 Learn the basic concepts of the data collection and computer technology	1	1	2	2	3	2	3	2	2	1	3	2	2	3	3	1
CO4 Recall the basic concepts the introduction of biostatistics	3	2	2	2	3	2	3	2	2	1	2	3	1	3	3	2
CO5: Relate the basic idea of correlation , regression ,hypothesis, annova and sampling	1	1	2	2	3	2	3	2	2	1	3	2	2	3	3	1

Legends: 1- Low, 2- Medium, 3- High

Course Curriculum Map

POs & PSOs No.	COs No.& Titles	SOs No.	Laboratory Instruction (LI)	Classroom Instruction(CI)	Self Learning (SL)
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO1- Define introduction of research methodology and research problem	SO1.1 SO1.2 SO1.3 SO1.4 SO1.5	00	Unit-1.introduction to research methodology, research problem 1,2,3,4,5, 6,7,8,9,10,11,12,13,14,15,16,17,18,19,20	01
PO 1,2,3,4,5,6,7,8, PSO 1,2, 3, 4	CO2 Explain the research design , measurement and scaling technique	SO2.1 SO2.2 SO2.3 SO2.4 SO2.5	00	Unit-2 research design and measurement & scaling techniques 1,2,3,4,5, 6,7,8,9,10,11,12,13,14,15,16,17,18,19,20	03
PO 1,2,3,4,5,6,7,8, PSO 1,2, 3, 4	CO3 : : Illustrate the concept of the data collection and computer technology	SO3.1 SO3.2 SO3.3 SO3.4	00	unit-3 : data collection and computer technolog 1,2,3,4,5, 6,7,8,9,10,11,12,13,14,15,16,17,18,19,20	01
PO 1,2,3,4,5,6,7,8, PSO 1,2, 3, 4	CO 4: Analyze the basic concepts the introduction of biostatistics	SO4.1 SO4.2 SO4.3 SO4.4 SO4.5	00	Unit-4 introduction,of biostatistics 1,2,3,4,5, 6,7,8,9,10,11,12,13,14,15,16,17,18,19,20	01
PO: 1,2,3,4,5,6,7,8, PSO 1,2, 3, 4	CO 5 Evaluate the basic idea of correlation , regression ,hypothesis, annova and sampling	SO5.1 SO5.2 SO5.3 SO5.4 SO5.5	00	Unit 5: correlation,& regression, hypotheses, anova, sampling 1,2,3,4,5, 6,7,8,9,10,11,12,13,14,15,16,17,18,19,20	01

YEAR IV

Course Code: 122BPT43

Course Title: Cardiothoracic disease &Surgeries.

Pre-Requisite: Student should have basic knowledge of cardiothoracic related disease &surgeries.

Rationale: The student studying BPT should possess to study of The cardiothoracic surgery are debilitating conditions affecting the heart and lungs, as well as the greater chest area. Cardiovascular and lung diseases are globally associated with significant morbidity and mortality

Course Outcomes:

Course Code:	122BPT43
Course Title:	Cardiothoracic disease and surgeries
Course Outcomes:	
122BPT43.1	Find how to introduce of cardiothoracic disease
122BPT43.2	Apply concepts regarding the respiratory disease including disease of chest wall
122BPT43.3	Learn the basic concepts of the cardiothoracic surgery
122BPT43.4	Recall the basic concepts the of thoracic surgery
122BPT43.5	Relate the basic idea of thoracic surgery and medical management

CODE	Course Code	Course Title	Scheme of studies (Hours/Week)				Total Study Hours(CI+LI+SW+SL)
			CI	LI	SW	SL	
PCC	122BPT43	Cardiothoracic disease and surgeries	4	0	1	1	6

Scheme of Studies

Legend: **CI:** Classroom Instruction (Includes different instructional strategies i.e. Lecture (L) and Tutorial (T) and others),
LI: Laboratory Instruction (Includes Practical performances in laboratory workshop, field or other locations using different instructional strategies)
SW: Sessional Work (includes assignment, seminar, mini project etc.),
SL: Self Learning,
C: Credits.

Note: SW & SL has to be planned and performed under the continuous guidance and feedback of teacher to ensure outcome of Learning.

Scheme of Examination

Theory

CODE	Course Code	Course Title	Internal Assessment		University Examination			Total
			Theory	Practical	Theory	Viva	Practical	
PCC	122BP T43	Cardiothoracic disease and surgeries	20	-	80	-	-	100

122BPT43.1: Find how to introduce of cardiothoracic disease

Item	Hrs
CI	20
LI	00
SW	02
SL	01
Total	23

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO1.1 To Understand infectious disease</p> <p>SO1.2 To learn about wound, scar, ulcers ,boils and carbuncles</p> <p>SO1.3 To learn about pre- and post-operative physical examination</p> <p>SO1.4Application of Postoperative complications</p>		<p>Unit-1 INTRODUCTION O F CARDIO - THORACIC DISEASES</p> <p>1.1 Brief idea of Anatomy and Physiology of Cardio- respiratory systems.</p> <p>1.2 Outline Aetiopathogenesis of Cardio- respiratory disorders</p> <p>1.3 Investigations, Diagnostic, Differential diagnosis and principles of management.</p> <p>1.4 Cardio - Vascular System</p> <p>1.5 i) Cardiac failure - Definition, Causes, Symptoms and Signs</p> <p>1.6 Brief management of Cardiac failure.</p> <p>1.7 Rheumatic Fever - Definition, Brief description of Aetiology,</p> <p>1.8 Clinical features, Complication and Treatment</p> <p>1.9 Congenital Heart Diseases:</p>	<p>1. Blood transfusion</p>

	<p>Classification and brief outline of diseases like ASD</p> <p>1.10 VSD,</p> <p>1.11 PDA,</p> <p>1.12 Fallots's Tetralogy with complication. iv) Ischemic</p> <p>1.13 Heart Disease - Aetiopathogenesis, Classification. Symptoms,</p> <p>1.14 Diagnosis and Medical and Surgical treatment</p> <p>1.15 Hypertension - Definition, Classification, Symptomatology, Complications and Treatment</p> <p>1.16 Brief description of Deep Vein Thrombosis and</p> <p>1.17 Pulmonary embolism. viii) Vascular Disease:</p> <p>1.18 Atherosclerosis,</p> <p>1.19 Burgers disease,</p> <p>1.20 Phlebitis etc</p>	
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SW-1 Suggested Sectional Work (SW): Assignments:
Wounds, scars
Mini Project:
boils
Other
Activities(Specify):
Post operative complication

122BPT43.2: Apply concepts regarding the respiratory disease including disease of chest wall

Hours

Item	AppXHrs
CI	20
LI	00
SW	02
SL	01
Total	23

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO2.1 To Understand Principles Abdominal surgery</p> <p>SO2.2 To learn about Burns</p> <p>SO2.3 To learn about Principles Plastic Surgery</p> <p>SO2.4 To learn about pneumonia</p> <p>SO2.5 To learn about bronchial asthma</p>		<p>Unit-2 RESPIRATORY DISEASES INCLUDING DISEASES OF CHEST WALL</p> <p>2.1 Chronic Bronchitis Definition. Clinical features, and investigation, complication and treatment</p> <p>2.2 Chronic Bronchitis Definition. Clinical features, and investigation, complication and treatment</p> <p>Emphysema Definition. Clinical features, and investigation, complication and treatment</p> <p>2.3 Emphysema Definition. Clinical features, and investigation, complication and treatment</p> <p>2.4 Bronchial asthma Definition, Aetiopathogenesis, clinical features, Diagnosis and Treatment.</p> <p>2.5 Bronchial asthma Definition, Aetiopathogenesis, clinical features, Diagnosis and Treatment.</p> <p>2.6 Pneumonia - Definition, Classification, clinical features, Complications and Treatment.</p> <p>2.7 Pneumonia - Definition, Classification, clinical features, Complications and Treatment.</p> <p>2.8 Tuberculosis - Aetiopathogenesis, clinical test of pulmonary tuberculosis, Diagnosis Complication & Treatment.</p> <p>2.9 Tuberculosis - Aetiopathogenesis, clinical test of pulmonary tuberculosis, Diagnosis Complication & Treatment.</p> <p>2.10 Tuberculosis - Aetiopathogenesis, clinical test of pulmonary tuberculosis, Diagnosis Complication & Treatment.</p>	<p>1. Mastectomy</p>

		<p>2.11 Lung abscess and Bronchiectesis - Definition, clinical features, Diagnosis and Treatment.</p> <p>2.12 Lung abscess and Bronchiectesis - Definition, clinical features, Diagnosis and Treatment.</p> <p>2.13 Lung abscess and Bronchiectesis - Definition, clinical features, Diagnosis and Treatment.</p> <p>2.14 Chest wall deformities- Describe various deformities of chest wall, its effect and Pulmonary diseases associated with it.</p> <p>2.15Chest wall deformities- Describe various deformities of chest wall, its effect and</p> <p>2.16 Pulmonary diseases associated with it. Chest wall deformities- Describe various deformities of chest wall, its effect and Pulmonary diseases associated with it.</p> <p>2.17 Occupational Lung Diseases - Clinical features, Diagnosis and Treatment.</p> <p>2.18 Occupational Lung Diseases - Clinical features, Diagnosis and Treatment.</p> <p>2.19 Respiratory failure - Classification, Causes and Treatment.</p> <p>2. Respiratory failure - Classification, Causes and Treatment.</p>	
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SW-1 Suggested Sectional Work

(SW): Assignments:

Abdominal Incisions.

Mini Project:

Classification of burns .

OtherActivities(Specify):.

Principles of cosmetic surgery..

122BPT43.3: Learn the basic concepts of the cardiothoracic surgery

Hours

Item	Hrs
CI	20
LI	00
SW	02
SL	01
Total	23

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO3.1 To Understand Ophthalmology condition</p> <p>SO3.2 To learn about common condition like errors of refraction, squint, conjunctivitis, trachoma</p> <p>SO3.4 glaucoma otoscleros</p>		<p>Unit-3 Cardiothoracic surgery</p> <p>3.1 Introduction-types of incision, pre and post operative assessment, management and</p> <p>3.2 Introduction-types of incision, pre and post operative assessment, management and</p> <p>3.3 complicationa of cardio thoracic surgery and their management.</p> <p>3.4 complicationa of cardio thoracic surgery and their management.</p> <p>3.5 Cardiac Surgery-Outline indication, contra indication.</p> <p>3.6 Cardiac Surgery-Outline indication, contra indication.</p> <p>3.7 site of incision, pre and post Operative management and complications of the following:</p> <p>3.8 site of incision, pre and post Operative management and complications of the following:</p> <p>3.9 Valvotomy and Valve Replacement</p> <p>3.10 Valvotomy and Valve Replacement</p> <p>3.11 Open heart surgery/ cardiac by pass surgery</p> <p>3.12 Open heart surgery/ cardiac by pass surgery</p> <p>3.13 Open heart surgery/ cardiac by pass surgery</p> <p>3.14 Surgery of pericardium</p> <p>3.15 Surgery of pericardium</p>	<p>1. Conjunctivitis</p>

		<p>3.16 Heart transplantation</p> <p>3.17 Pacemaker</p> <p>3.18 Coronary angioplasty</p> <p>3.19 Balloon angioplasty and vascular surgery</p> <p>3.20 Balloon angioplasty and vascular surgery</p>	
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SW-1 Suggested Sectional Work

(SW): Assignments:

Cataract.

Mini Project:

Otosclerosis

Other Activities

(Specify):. loss of hearing

122BPT43.4: Recall the basic concepts the of thoracic surgery

Hours

Item	Hrs
CI	20
LI	00
SW	02
SL	01
Total	23

Session Out comes(SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO4.1 To understand thoracic condition</p> <p>SO4.2 To learn about pneumothorax</p> <p>SO4.3 To learn about lung contusion.</p> <p>SO4.4 Application of indication and contraindication of thoracic surgery.</p>		<p>UNIT-4 Thoracic Surgery</p> <p>4.1 Outline clinical features and management of the following;</p> <p>4.1 Fracture Of Ribs,</p> <p>4.2 Fracture Of Ribs,</p> <p>4.3 Flail Chest,</p> <p>4.4 Flail Chest,</p> <p>4.5 Flail Chest,</p> <p>4.6 Flail Chest,</p> <p>4.7 Stove In Chest,</p> <p>4.8 Stove In Chest,</p> <p>4.9 Pneumothorax,</p> <p>4.10 Pneumothorax,</p> <p>4.11 Haemothorax,</p> <p>4.12 Lung Contusion</p> <p>4.13 Lacerration</p> <p>4.14 Injury To Vessels</p> <p>4.15 Brounchus.</p> <p>4.16 Outetline indications, contradiction, site of incision, pre and post operative management and complication of following-</p> <p>4.17 Lobectomy,</p> <p>4.18 Pneumonectomy, Segentectomy, Pleuro-Pneumonectomy, Thoracoplasty,</p> <p>4.19 Decortion,</p> <p>4.20Tracheostomy</p>	<p>1. Pneumothorax,</p>

SW-1 Suggested Sectional Work

(SW): Assignments:

Pneumonectomy

Mini

Project:

Thoracop

lasty.
 Other Activities
 (Specify):
Haemothorax

122BPT43.5: ACQUIRE KNOWLEDGE REGARDING THORACIC SURGERY MEDICAL MANAGEMENT

Hours

Item	Hrs
CI	20
LI	00
SW	02
SL	01
Total	23

Session Out comes(SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
SO5.1 To Understand carcinoma of lung. SO5.2 To learn SO5.3 To learn about Weaning The Patient From Ventilator SO5.4 Application of cardio- pulmonary Resuscitation, SO5.5 Application of Artificial Respiration		UNIT-5 THORACIC SURGERY MEDICAL MANAGEMENT 5.1 Outline clinical features and management of carcinoma of lung. 5.2 Describe in detail the following procedure: 5.3 Management Of Endotracheal Tubes, 5.4 Management Of Endotracheal Tubes, 5.5 Tracheal Suction, 5.6 Tracheal Suction, 5.7 Weaning The Patient From Ventilator, 5.8 Weaning The Patient From Ventilator, 5.9 Extubation 5.10 Extubation 5.11 Post-Extubation Care. 5.12 Post-Extubation Care. 5.13 Describe the principles of cardio-pulmonary Resuscitation, 5.14 Describe the principles of cardio-pulmonary Resuscitation, 5.15 Describe the principles of cardio-pulmonary Resuscitation, 5.16 Cardiac Massage, 5.17 Cardiac Massage, 5.18 Artificial Respiration, 5.19 Defibrillators And Their Use. 5.20 Defibrillators And Their Use.	1. Tracheal Suction

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SW-1 Suggested Sectional

Work(SW): Assignments:

Tetanus, diphtheria, Mycobacterial, measles.

Mini Project:

Pulse-Polio
programmes

Other Activities

(Specify): ASD,
VSD, PDA.

Brief of Hours suggested for the Course Outcome

Course Outcomes	Class Lecture (CI)	Sessional Work (SW)	Self-Learning (SI)	Total hour (CI+SW+SI)
122BPT43.1: Define introduction of cardiothoracic disease	20	2	1	23
122BPT43.2: Explain the respiratory disease including disease of chest wall	20	2	1	23
122BPT43.3: Illustrate basic concepts of the cardiothoracic surgery	20	2	1	23
122BPT43.4: Analyze the basic concepts the of thoracic surgery	20	2	1	23
122BPT43.5: Evaluate the basic idea of thoracic surgery and medical management	20	2	1	23
Total Hours	100	10	05	115

**Suggestio of end year Assessment
Suggested Specification Table (For ESA)**

CO	Unit Titles	Marks Distribution				Total Marks
		Ap	An	Ev	Cr	
CO-1	Introduction of cardiothoracic disease					
CO-2	the respiratory disease including disease of chest wall					
CO-3	basic concepts of the cardiothoracic surgery					
CO-4	Importance of organizational Behavior and Emotional Intelligence					
CO-5	basic idea of thoracic surgery and medical management					
Total						20

Legend: Ap: Apply, An: Analyze, Ev: Evaluate Cr: Create

Note. Detailed Assessment rubric need to be prepared by the course wise teachers for above tasks. Teachers can also design different tasks as per requirement, for end semester assessment.

Suggested Instructional/Implementation Strategies:

1. Improved Lecture
2. Tutorial
3. Case Method
4. Group Discussion
5. Role Play
6. Visit to hospitals
7. Demonstration

Suggested Learning Resources:

(a) Books:

S. No.	Title	Author	Publisher	Edition & Year
1	Cardiothoracic Surgery: Recent Advances and Techniques	Daniel Willson	Foster Academics	(7 June 2019)
2	Braunwald's Heart Disease: A Textbook of Cardiovascular Medicine	Douglas P. Zipes , Peter Libby	Elsevier - Health Sciences Division;	12th edition (18 November 2021)
3	Textbook of Interventional Cardiology Hardcover	Eric J. Topol MD and Paul S. Teirstein MD	Elsevier; 8th edition Elsevier	(12 November 2019)
4	Textbook of Pulmonary and Critical Care Medicine (vol 1&vol 2)	SK Jindal	Jaypee Brothers Medical Publishers; Second edition (1 January 2017)
5	Lecture note provided by Faculty of Medical science, AKS University, Satna .			

Curriculum Development Team

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CO, POs and PSOs Mapping
Program title: B.P.T (Bachelor of physiotherapy)
Course code122BPT43
Course title: Cardiothoracic disease and surgeries

Course outcomes	Program outcomes												Program specific outcome			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO2	PSO3	PSO4
	Disciplinary knowledge	Psychomotor Skills	Communication skills	Critical thinking	Problem Solving	Analytical reasoning	Research – Related Skills	Co-operation /Team Work	Socio-cultural and multicultural competency	Awareness of moral, ethical and legal issues	Leadership qualities	Ongoing Learning:	Ability to Patient professional care .	Ability to Demonstrate clinical decision and patient care	Ability to counsel the patients, family, colleagues and students aspects of physiotherapy treatment.	Ability to Work effectively in various professional collaborative places like hospital.
CO1 Find how to introduce of cardiothoracic disease	2	2	1	1	2	2	2	1	2	1	2	1	1	2	2	2
Apply concepts regarding the respiratory disease including disease of chest wall	1	1	2	2	1	2	3	2	1	1	2	2	2	2	2	1
CO3 Learn the basic concepts of the cardiothoracic surgery	2	2	1	1	2	2	2	1	2	1	2	1	1	2	2	2
CO4 Recall the basic concepts the of thoracic surgery	1	1	2	2	3	2	3	2	2	1	3	2	2	3	3	1
Relate the basic idea of thoracic surgery and medical management	2	2	1	1	2	2	2	1	2	1	2	1	1	2	2	2

Legends: 1- Low, 2- Medium, 3- High

Course Curriculum Map:

POs & PSOs No.	COs No.& Titles	SOs No.	Laboratory Instruction (LI)	Classroom Instruction(CI)	Self Learning (SL)
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO-1: Define introduction of cardiothoracic disease	SO1.1 SO1.2 SO1.3 SO1.4 SO1.5	00	Unit-1.0 introduction of cardiothoracic disease 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20	01
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO 2 : Explain the respiratory disease including disease of chest wall.	SO2.1 SO2.2 SO2.3 SO2.4 SO2.5	00	Unit-2 the respiratory disease including disease of chest wall. 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20	01
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO3 : Illustrate basic concepts of the cardiothoracic surgery	SO3.1 SO3.2 SO3.3 SO3.4 SO3.5	00	Unit-3 : cardiothoracic surgery 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20	01
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO 4: Analyze the basic concepts the of thoracic surgery.	SO4.1 SO4.2 SO4.3 SO4.4 SO4.5	00	Unit-4: thoracic surgery. 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20	01
PO: 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO 5: Evaluate the basic idea of thoracic surgery and medical management	SO5.1 SO5.2 SO5.3 SO5.4 SO5.5	00	Unit 5: thoracic surgery and medical management 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20	01

YEAR IV

Course Code: 122BPT44
Course Title: Physiotherapeutic in general & cardiothoracic conditions

Pre-Requisite: Student should have basic knowledge of Physiotherapy management in cardiothoracic r

Rationale: The student studying BPT should posses to study of Physiotherapeutic in general & cardiothoracic conditions, Physiotherapists have an important role after cardiac surgery. They help patients heal faster after cardiac surgery. They even play a vital role in the pre-operation or before cardiac surgery phase.

Course Outcomes:

Course Code:	122BPT44
Course Title:	Physiotherapeutic in general & cardiothoracic condition
Course Outcomes:	
122BPT44.1	Find how to introduce the anatomical, physiological, assessment, investigations, tests, physiotherapy techniques of pulmonary system
122BPT44.2	Apply concepts regarding the physiotherapy techniques , drug therapy, management of wound ulcers, management of wound ulcers, neonatal and pediatric physiotherapy
122BPT44.3	Learn the basic concepts of the physiotherapy management of obstructive lung conditions, restrictive lung conditions, breathlessness, pulmonary rehabilitation, lung surgeries
122BPT44.4	Recall the basic concepts the management of respiratory failure, burns, cardiac surgeries, peripheral vascular disease, abdominal surgeries.
122BPT44.5	Relate the basic idea of physiotherapy management of amputations, medical, surgical and radiation oncology, obstetrics, hypertension, diabetes, renal failure and obesity, geriatrics

Scheme of Studies

CODE	Course Code	Course Title	Scheme of studies (Hours/Week)				
			C I	LI	SW	SL	Total Study Hours (CI+LI+SW+SL)
PCC	122BPT44	Physiotherapeutic in general & cardiothoracic condition	4	1	1	1	8
			313				

Legend: **CI:** Classroom Instruction (Includes different instructional strategies i.e. Lecture (L) and Tutorial (T) and others),
LI: Laboratory Instruction (Includes Practical performances in laboratory workshop, field or other locations using different instructional strategies)
SW: Sessional Work (includes assignment, seminar, mini project etc.),
SL: Self Learning,
C: Credits.

Note: SW & SL has to be planned and performed under the continuous guidance and feedback of teacher to ensure outcome of Learning.

Scheme of Examination

Theory

CODE	Course Code	Course Title	Internal Assessment		University Examination			Total
			Theory	Practical	Theory	Viva	Practical	
PCC	122BP T44	Physiotherapeutic in general & cardiothoracic condition	20	20	100	20	40	200

122BPT44.1: Find how to introduce the anatomical, physiological, assessment, investigations, tests, physiotherapy techniques of pulmonary system
Hours

Item	Hrs
CI	16
LI	04
SW	01
SL	01
Total	22

Session Out comes(SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
SO1.1 To Understand infectious disease SO1.2 To learn about Diseases of blood SO1.3 To learn about Diseases of Liver SO1.4 Application of GIT Diseases	1.4. Physiotherapy techniques to increase lung volume – controlled mobilization, positioning, breathing exercises, 2. Incentive Spirometry, CPAP, IPPB	UNIT-1 ANATOMICAL, PHYSIOLOGICAL, ASSESSMENT, INVESTIGATIONS, TESTS, PHYSIOTHERAPY TECHNIQUES OF PULMONARY SYSTEM 1.1 Anatomical and Physiological differences between the Adult and Pediatric lung. 1.2 Anatomical and Physiological differences between the Adult and Pediatric lung 1.3. Bedside assessment of the patient- Adult & Pediatric. 1.4 Bedside assessment of the patient- Adult & Pediatric 1.5 Investigations and tests Exercise tolerance Testing 1.6 Investigations and tests Exercise tolerance Testing 1.7 Cardiac Pulmonary, Radiography, PFT, ABG, ECG, Hematological and Biochemical Tests 1.8 Cardiac Pulmonary, Radiography, PFT, ABG, ECG, Hematological and Biochemical Tests 1.9 Physiotherapy techniques to increase lung volume – controlled mobilization, positioning, 1.10 Physiotherapy techniques to increase lung volume – controlled mobilization, positioning 1.11 Physiotherapy techniques to	1. Bacterial – Tetanus, Typhoid. Viral – Herpes simplex, Herpes Zoster, Measles,.

		<p>increase lung volume – controlled mobilization, positionin</p> <p>1.12breathing exercises</p> <p>1.13Neurophysiological Facilitation of Respiration</p> <p>1.14Mechanical aids -Incentive Spirometry, CPAP,IPPB</p> <p>1.15Mechanical aids -Incentive Spirometry, CPAP,IPPB</p> <p>1.16 Physiotherapy techniques to decrease thework of breathing – Measures to optimize the balance between energy supply and demand, positioning, Breathing re-education – Breathing control techniques, mechanical aids</p> <p>– IPPB, CPAP, BiPAP</p>	
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SW-1 Suggested Sectional Work(SW): Assignments:
PFT,ABG,ECG
Mini Project:
IPPB, CPAP, BiPAP
Other Activities (Specify):
Breathing re-education

122BPT44.2 Apply concepts regarding the physiotherapy techniques, drug therapy, management of wound ulcers, management of wound ulcers, neonatal and pediatric physiotherapy

Hours

Item	Hrs
CI	16
LI	04
SW	01
SL	01
Total	22

Session Out comes(SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO2.1To Understand Principles Developmental disorders</p> <p>SO2.2 To learn about Early detection of brain damaged</p> <p>SO2.3 To learn about Principles of examination of higher function and applicability in training.</p> <p>SO2.4Application of Physiotherapy evaluation of a neurological patient</p>	<p>1.Postural Drainage, Manual techniques</p> <p>2.Rib Springing, ACBT, Autogenic Drainage</p>	<p>UNIT-2 PHYSIOTHERAPY TECHNIQUES, DRUG THERAPY, MANAGEMENT OF WOUND ULCERS, MANAGEMENT OF WOUND ULCERS, NEONATAL AND PEDIATRIC PHYSIOTHERAPY</p> <p>2.1 Physiotherapy techniques to clear secretions</p> <p>2.2 Hydration, Humidification & Nebulisation,</p> <p>2.3 Mobilization and Breathing exercises</p> <p>2.4 Postural Drainage, Manual techniques</p> <p>2.5 Percussion, Vibration and Shaking,</p> <p>2.6 Rib Springing, ACBT, Autogenic Drainage,</p> <p>2.7 Mechanical Aids – PEP, Flutter, IPPB, Facilitation of Cough and Huff, Nasopharyngeal Suctioning</p> <p>2.8 Drug therapy – Drugs to prevent and treat inflammation,</p> <p>2.9 Drugs to treat Bronchospasm,</p> <p>2.11 Drugs to treat Breathlessness, Drugs to help sputum clearance,</p> <p>2.12 Drugs to inhibit coughing, Drugs to improve ventilation, Drugs to reduce pulmonary hypertension, Drug delivery doses, Inhaled Nebulizers.</p>	<p>1. Mobilization and Breathing exercises</p> <p>2 Hydration, Humidification and Nebulisation</p>

		<p>2.13 Management of wound ulcers- Care of ulcers and wounds - Care of surgical scars U.V.R and other electro therapeutics for healing of wounds, prevention of Hyper granulated Scars Keoloids, Electrotherapeutics measures for relief of pain during mobilization of scars tissues</p> <p>2.14 Management of wound ulcers - Documentation of assessment, treatment and follow up skin conditions. U.V.R therapy in various skin conditions; Vitiligo; Hair loss; Pigmentation; Infected wounds ulcers.</p> <p>2.15 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.</p> <p>2.16 Neonatal and Pediatric Physiotherapy – Chest physiotherapy for children, The neonatal unit, Modifications of chest physiotherapy for specific neonatal disorders, Emergencies in the neonatal unit</p>	
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SW-1 Suggested Sectional

Work(SW): Assignments:

Neonatal and Pediatric Physiotherapy.

Mini Project:

Faradic foot bath for Hyperhydrosis .

Other Activities (Specify):.

Management of wound ulcers..

122BPT34.3: Learn the basic concepts of the physiotherapy management of obstructive lung conditions, restrictive lung conditions, breathlessness, pulmonary rehabilitation, lung surgeries

Hrs

Item	Hrs
CI	16
LI	04
SW	01
SL	01
Total	22

Session Out comes(SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO3.1 To Understand Genetics and Diseases</p> <p>SO3.2 To learn about Allergy Drug reactions</p> <p>SO3.3 To learn about dermatological condition</p>	<p>1. Physiotherapy following Lung surgeries</p> <p>1.1: Physiotherapy following Lung surgeries</p>	<p>UNIT-3physiotherapy MANAGEMENT OF OBSTRUCTIVE LUNG CONDITIONS, RESTRICTIVE LUNG CONDITIONS, BREATHLESSNESS, PULMONARY REHABILITATION, lung SURGERIES</p> <p>3.1 Physiotherapy in Obstructive lung conditions</p> <p>3.2 Physiotherapy in Obstructive lung conditions</p> <p>3.3 Physiotherapy in Obstructive lung conditions</p> <p>3.4 Physiotherapy in Obstructive lung conditions</p> <p>3.5 Physiotherapyin Restrictive lung conditions</p> <p>3.6 Physiotherapyin Restrictive lung conditions</p> <p>3.7 Physiotherapyin Restrictive lung conditions</p> <p>3.8 Physiotherapyin Restrictive lung conditions</p> <p>3.9 Management of breathlessness.</p> <p>3.10 Management of breathlessness</p> <p>3.11 Management of breathlessness</p> <p>3.12 Management of breathlessness</p> <p>3.13 Pulmonary Rehabilitation.</p> <p>3.14 Pulmonary Rehabilitation</p> <p>3.15 Pulmonary Rehabilitation</p> <p>3.16 Physiotherapy management of Lung surgeries</p>	<p>1.Leprosy-</p>

SW-1 Suggested Sectional Work(SW): Assignments:

Physiotherapy management of Lung surgeries

Mini Project:

Pulmonary Rehabilitation

Other Activities (Specify):.

Management of breathlessness

122BPT44.4 : Recall the basic concepts the management of respiratory failure, burns, cardiac surgeries, peripheral vascular disease, abdominal surgeries

Hours

Item	Hrs
CI	16
LI	04
SW	01
SL	01
Total	22

Session Out comes(SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO4.1 To understand geriatrics conditions</p> <p>SO4.2 To learn about Implications of aging in physical therapy. lung disease</p> <p>SO4.3 To learn about Assessment Radiology of Bone and joints</p> <p>SO4.4 Application of Radiology of chest including Heart</p>	<p>1. ICU Physiotherapy</p> <p>2. Cardiac Rehabilitation</p>	<p>UNIT-4 MANAGEMENT OF RESPIRATORY FAILURE,BURNS,CARDIAC SURGERIES, PERIPHERAL VASCULAR DISEASE, ABDOMINAL SURGERIES</p> <p>4.1Respiratory failure – Oxygen Therapy and Mechanical Ventilation. Introduction to ICU : ICU monitoring –Apparatus,</p> <p>4.2Airways and Tubes used in the ICU –</p> <p>4.3Physiotherapy in the ICU</p> <p>4.4 Common conditions in the ICU – Tetanus,</p> <p>4.5 Head Injury,</p> <p>4.6Lung Disease,</p> <p>4.7Pulmonary Oedema,</p> <p>4.8Multiple Organ Failure, Neuromuscular Disease, Smoke Inhalation, Poisoning, Aspiration,</p> <p>4.9Near Drowning, ARDS, Shock</p> <p>4.10 Dealing with an Emergency Situation in the ICU.</p> <p>4.11 Burns management - Role of physiotherapy in the management of burns,</p> <p>4.12 Post grafted cases- Mobilization and Musculo- skeletal restorative exercises following burns.</p> <p>4.13 Physiotherapy management following cardiac surgeries.</p> <p>4.14 Cardiac Rehabilitation.</p> <p>4.15 Physiotherapy management following Peripheral Vascular Disease (PVD).</p> <p>4.16 Abdominal Surgeries -</p>	<p>1. Pulmonary embolism.</p>

		Management of Pulmonary Restorative Dysfunction following surgical procedures on Abdomen and Thorax..	
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SW-1 Suggested Sectional

Work(SW): Assignments:

physiology of ageing

Mini Project:

Lung disease.

Other Activities

(Specify):

Radiological

assessment

122BPT44.5: Relate the basic idea of physiotherapy management of amputations, medical, surgical and radiation oncology, obstetrics, hypertension, diabetes, renal failure and obesity, geriatrics

Hours

Item	Hrs
CI	16
LI	04
SW	01
SL	01
Total	22

Session Out comes(SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO5.1 To Understand Normal Growth and development of child</p> <p>SO5.2 To learn about Common infectious diseases in children</p> <p>SO5.3 To learn about Immunization programmes</p> <p>SO5.4 Application of Child and nutrition</p> <p>SO5.5 Application of Clinical presentation, management of Cerebral palsy, Poliomyelitis, Muscular dystrophy</p> <p>SO5.6 Application of Childhood rheumatism</p> <p>SO5.7 Application of Acute CNS infections</p>	<p>1.Management of Amputations following Diabetes, PVD - Prosthesis in amputations of lower limbs</p> <p>2.Physiotherapy intervention in the management of Medical, Surgical and Radiation Oncology Cases</p> <p>3.Home program and education of family members in patient care</p>	<p>UNIT-5 PHYSIOTHERAPY MANAGEMENT OF AMPUTATIONS, MEDICAL,SURGICAL AND RADIATION ONCOLOGY, OBSTETRICS,HYPERTENSION, DIABETES, RENAL FAILURE AND OBESITY, GERIATRICS</p> <p>5.1 Management of Amputations following Diabetes, PVD - Prosthesis in amputations of lower limbs following ulcers and gangrenes</p> <p>5.2 Management of Amputations following Diabetes, PVD - Prosthesis in amputations of lower limbs following ulcers and gangrenes</p> <p>5.3 Management of Amputations following Diabetes, PVD - Prosthesis in amputations of lower limbs following ulcers and gangrenes</p> <p>5.4 Physiotherapy intervention in the management of Medical, Surgical and Radiation Oncology Cases</p> <p>5.5 Physiotherapy intervention in the management of Medical, Surgical and Radiation Oncology Cases</p> <p>5.6 Home program and education of family members in patient care.</p> <p>5.7 Home program and education of family members in patient care</p> <p>5.8 Home program and education of family members in patient care</p> <p>5.9 Physiotherapy in Obstetrics – Antenatal Care,</p>	<p>1. Cerebral palsy</p>

		5.10 Antenatal Education, 5.11 Postnatal Care. 5.12 Electrotherapy and Exercise Therapy measures for the re- education of Ano-Urethral sphincter. 5.13 Treatment, Response to exercise and Implications of Physiotherapy in the following disease conditions: Hypertension, 5.14 Diabetes, Renal Failure 5.15 Obesity. 5.16 Geriatrics: Problems in old age, role of physiotherapy in elderly	
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SW-1 Suggested Sectional Work(SW): Assignments:

Physiotherapy in Obstetrics – Antenatal Care.

Mini Project: Geriatrics: Problems in old age, role of physiotherapy

Other Activities (Specify): Electrotherapy and Exercise Therapy measures for the re-education of Ano-Urethral sphincter

Brief of Hours suggested for the Course Outcome

Course Outcomes	Class Lecture (CI)	Sessional Work (SW)	Self-Learning (SI)	Total hour (CI+SW+SI)
122BPT44.1 Define the anatomical, physiological, assessment, investigations, tests, physiotherapy techniques of pulmonary system	16	1	1	18
122BPT44..2: Explain physiotherapy techniques , drug therapy, management of wound ulcers, management of wound ulcers, neonatal and pediatric physiotherapy	16	1	1	18
122BPT44..3: Illustrate the basic concepts of the physiotherapy management of obstructive lung conditions, restrictive lung conditions, breathlessness, pulmonary rehabilitation, lung surgeries	16	1	1	18
122BPT44..4: Analyze the basic concepts the management of respiratory failure, burns, cardiac surgeries, peripheral vascular disease, abdominal surgeries	16	1	1	18
122BPT44..5: Evaluate the basic idea of physiotherapy management of amputations, medical, surgical and radiation oncology, obstetrics, hypertension, diabetes, renal failure and obesity, geriatrics	16	1	1	18
Total Hours	80	05	05	100

**Suggestion for End Semester Assessment
Suggested Specification Table (For ESA)**

CO	Unit Titles	Marks Distribution				Total Marks
		Ap	An	Ev	Cr	
CO-1	The Anatomical, Physiological, Assessment, Investigations, Tests, Physiotherapy Techniques Of Pulmonary System					
CO-2	Overview Of Physiotherapy Management Of Obstructive Lung Conditions, Restrictive Lung Conditions, Breathlessness, Pulmonary Rehabilitation, Lung Surgeries					
CO-3	Physiotherapy Management Of Obstructive Lung Conditions, Restrictive Lung Conditions, Breathlessness, Pulmonary Rehabilitation, Lung Surgeries					
CO-4	Management Of Respiratory Failure, Burns, Cardiac Surgeries, Peripheral Vascular Disease, Abdominal Surgeries					
CO-5	Physiotherapy Management Of Amputations, Medical, Surgical And Radiation Oncology, Obstetrics, Hypertension, Diabetes, Renal Failure And Obesity.					
Total						100

Legend: Ap: Apply, An: Analyze, Ev: Evaluate Cr: Create

Note. Detailed Assessment rubric need to be prepared by the course wise teachers for above tasks. Teachers can also design different tasks as per requirement, for end semester assessment.

Suggested Instructional/Implementation Strategies:

1. Improved Lecture
2. Tutorial
3. Case Method
4. Group Discussion
5. Role Play
6. Visit to hospitals
7. Demonstration

Suggested Learning Resources:

(a) Books:

S. No.	Title	Author	Publisher	Edition & Year
1	Cash's text book of general medicine and surgical conditions for physiotherapist	Joan E. Cash Patricia A. Downie	Mosby;	2nd edition (8 May 1990)
2	Cash's text book of chest ,heart and vascular disorder for physiotherapist.	Joan E. Cash Patricia A. Downie D. M. Innocenti S.E. Jackson	Mosby;	4th edition (11 May 1987)
3	The brompton guide to chest physiotherapist – D.U GASKED (completed	Diana Vaughan Gaskell B.A. Webber	Blackwell Science Ltd;	3rd edition (1 May 1977)
4	Physiotherapy of paediatrics – shepherd	Roberta B., MA, EdD , FACP	Butterworth-Heinemann Ltd;	3rd edition (22 March 1995)
5	Lecture note provided by Faculty of Medical science, AKS University, Satna .			

Curriculum Development Team

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CO, POs and PSOs Mapping
Program title: B.P.T (Bachelor of physiotherapy)
Course code122BPT44
Course title: Physiotherapeutic in general & cardiothoracic conditi

Course outcomes	Program outcomes												Program specific outcome			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO2	PSO3	PSO4
	Disciplinary knowledge	Psychomotor Skills	Communication skills	Critical thinking	Problem Solving	Analytical reasoning	Research – Related Skills	Co-operation /Team Work	Socio-cultural and multicultural competency	Awareness of moral, ethical and legal issues	Leadership qualities	Ongoing Learning:	Ability to Patient professional care .	Ability to Demonstrate clinical decision patient care	Ability to counsel the patients, family,colleagues and students aspects of physiotherapy treatment.	Ability to Work effectively in various professional collaborative places like hospital.
CO1 Find how to introduce the anatomical, physiological, assessment, investigations, tests, physiotherapy techniques of pulmonary system	2	2	1	1	2	2	2	1	2	1	2	1	1	2	2	2
co2: Apply concepts regarding the physiotherapy techniques , drug therapy, management of wound ulcers, management of wound ulcers, neonatal and pediatric physiotherapy	1	1	2	2	1	2	3	2	1	1	2	2	2	2	2	1
Co3 :Learn the basic concepts of the physiotherapy management of obstructive lung conditions, restrictive lung conditions, breathlessness, pulmonary rehabilitation, lung surgeries	2	2	1	1	2	2	2	1	2	1	2	1	1	2	2	2
CO4 Recall the basic concepts the management of respiratory failure, burns, cardiac surgeries, peripheral vascular disease, abdominal surgeries.	1	1	2	2	3	2	3	2	2	1	3	2	2	3	3	1
CO5 Relate the basic idea of physiotherapy management of amputations, medical, surgical and radiation oncology, obstetrics, hypertension, diabetes, renal failure and obesity, geriatrics	2	2	1	1	2	2	2	1	2	1	2	1	1	2	2	2

Legends: 1- Low, 2- Medium, 3- High

Course Curriculum Map: BPT

POs & PSOs No.	COs No.& Titles	SOs No.	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO1:Define the anatomical, physiological, assessment, investigations, tests, physiotherapy techniques of pulmonary system	SO1.1 SO1.2 SO1.3 SO1.4	02	Unit-1. anatomical, physiological, assessment, investigations,,tests,,physiotherapy techniques of pulmonary system 1,2,3,4,5 ,6,7,8,9,10,11,12,13 ,14,15,16	1
PO 1,2,3,4,5,6,7,8, PSO 1,2, 3, 4	CO2 Explain physiotherapy techniques , drug therapy, management of wound ulcers, management of wound ulcers, neonatal and pediatric physiotherapy	SO2.1 SO2.2 SO2.3 SO2.4	02	Unit-2 physiotherapy techniques , drug therapy, management of wound ulcers, management of wound ulcers, neonatal,and,pediatric physiotherapy 1,2,3,4,5 ,6,7,8,9,10,11,12,13 ,14,15,16	1
PO 1,2,3,4,5,6,7,8, PSO 1,2, 3, 4	CO3 Illustrate the basic concepts of the physiotherapy management of obstructive lung conditions, restrictive lung conditions, breathlessness, pulmonary rehabilitation, lung surgeries	SO3.1 SO3.2 SO3.3	02	unit-3 : physiotherapy management of obstructive lung conditions, restrictive lung conditions, breathlessness, pulmonary rehabilitation, lung surgeries 1,2,3,4,5 ,6,7,8,9,10,11,12,13 ,14,15,16	1
PO 1,2,3,4,5,6,7,8, PSO 1,2, 3, 4	CO 4: Analyze the basic concepts the management of respiratory failure, burns, cardiac surgeries, peripheral vascular disease, abdominal surgeries	SO4.1 SO4.2 SO4.3 SO4.4	02	Unit-4 4 MANAGEMENT OF RESPIRATORY FAILURE,BURNS,CARDIAC SURGERIES, PERIPHERAL VASCULAR DISEASE, ABDOMINAL SURGERIES 1,2,3,4,5 ,6,7,8,9,10,11,12,13 ,14,15,16	1
PO: 1,2,3,4,5,6,7,8, PSO 1,2, 3, 4	CO 5 Evaluate the basic idea of physiotherapy management of amputations, medical, surgical and radiation oncology, obstetrics, hypertension, diabetes, renal failure and obesity, geriatrics	SO4.1 SO4.2 SO4.3 SO4.4 SO4.5	02 328	Unit 5: physiotherapy management of amputations, medical, surgical and radiation,oncology, obstetrics,hypertension, diabetes, renal failure and obesity, geriatrics 1,2,3,4,5 ,6,7,8,9,10,11,12,13 ,14,15,16	1

YEAR IV

Course Code: 122BPT45

Course Title: Sport physiotherapy

Pre-Requisite: Student should have basic knowledge of Physiotherapy management and training in Sport

Rationale: The student studying BPT should possess the ability to study and understand the Sport Physiotherapy, physiotherapists can provide high-quality care, enhancing athletic performance, preventing injuries, and promoting overall well-being.

Course Outcomes:

Course Code:	122BPT45
Course Title:	Sports Physiotherapy
Course Outcomes:	
122BPT45.1	Find how to introduce of sports physiotherapy.
122BPT45.2	Apply concepts regarding the physiological effect of exercise, principle of training and injury prevention
122BPT45.3	Learn the basic concepts of the physiotherapy management of sports injuries
122BPT45.4	Recall the basic concepts Physiotherapy management of sports injuries
122BPT45.5	Relate the basic idea of physiotherapy management of special age group sports injuries

Scheme of Studies

CODE	Course Code	Course Title	Scheme of studies (Hours/Week)				
			CI	LI	SW	SL	Total Study Hours (CI+LI+SW+SL)
PCC	122BPT45	Sports Physiotherapy	4	1	1	1	7

- Legend:**
- CI:** Classroom Instruction (Includes different instructional strategies i.e. Lecture (L) and Tutorial (T) and others),
 - LI:** Laboratory Instruction (Includes Practical performances in laboratory workshop, field or other locations using different instructional strategies)
 - SW:** Sessional Work (includes assignment, seminar, mini project etc.),
 - SL:** Self Learning,
 - C:** Credits.

Note: SW & SL has to be planned and performed under the continuous guidance and feedback of teacher to ensure outcome of Learning.

Scheme of Examination

Theory

CODE	Course Code	Course Title	Internal Assessment		University Examination			Total
			Theory	Practical	Theory	Viva	Practical	
PC C	122BP T45	Sports Physiotherapy	20	20	100	20	40	200

122BPT45.1: Find how to introduce of sports physiotherapy

Hours

Item	Hrs
CI	16
LI	04
SW	01
SL	01
Total	22

Session Out comes(sos)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO1.1 To Understand Basic Introduction of sports physiotherapy</p> <p>SO1.2 To learn about Measurement of fitness</p> <p>SO1.3 To learn about sports skills</p> <p>SO1.4 Muscular strength, measurement.</p> <p>SO1.5 Analysis of flexibility, exercise endurance</p>	<p>1. stretching</p> <p>2. muscular strength measurement</p>	<p>Unit-1 INTRODUCTION OF SPORTS PHYSIOTHERAPY</p> <p>1.1 Pre-exercise evaluation</p> <p>1.2 Pre-exercise evaluation</p> <p>1.3 Pre-exercise evaluation</p> <p>1.4 Diet and nutrition Measurement of fitness</p> <p>1.5 Diet and nutrition Measurement of fitness</p> <p>1.6 Diet and nutrition Measurement of fitness</p> <p>1.7 Components and sports skills</p> <p>1.8 Components and sports skills</p> <p>1.9 Components and sports skills</p> <p>1.10 Measurement of muscular strength,</p> <p>1.11 Measurement of muscular strength</p> <p>1.12 Measurement of muscular endurance,</p> <p>1.13 Measurement of muscular endurance</p> <p>1.14 Measurement of flexibility,</p> <p>1.15 Determination exercise endurance</p> <p>1.16 Determination exercise endurance</p>	<p>1. Comman terms about sports therapy.</p>

SW-1 Suggested Sectional Work(SW):

Assignments: objectives of sportstherapy.

Mini Project:Physiotherapy in sports condition

Other Activities (Specify):Measurement of flexibility

122BPT45.2: Apply concepts regarding the physiological effect of exercise, principle of training and injury prevention

Hours

Item	Hrs
CI	16
LI	04
SW	01
SL	01
Total	22

Session Out comes(SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO2.1 To Understand Physiological effects of exercise</p> <p>SO2.2 To learn about Physiological effects of Muscular system</p> <p>SO2.3 To learn Physiological effects of Cardio-respiratory system</p> <p>SO2.4 Application Principles of injury prevention</p> <p>SO2.5 Analysis of training & Rehabilitation in sports injuries</p>	<p>1. Physiological effects of exercise on body systems</p> <p>2. injury prevention</p>	<p>UNIT-2 PHYSIOLOGICAL EFFECT OF EXERCISE, PRINCIPLE OF TRAINING AND INJURY PREVENTION</p> <p>2.1 Physiological effects of exercise on body systems</p> <p>2.2 Physiological effects of exercise on body systems</p> <p>2.3 Physiological effects of exercise on body systems</p> <p>2.4 Muscular system</p> <p>2.5 Muscular system</p> <p>2.6 Muscular system</p> <p>2.7 Endocrine system</p> <p>2.8 Endocrine system,</p> <p>2.9 Endocrine system</p> <p>2.10 Cardio-respiratory system</p> <p>2.11 Cardio-respiratory system</p> <p>2.12 Cardio-respiratory system</p> <p>2.13 Nervous system</p> <p>2.14 Principles of injury prevention.</p> <p>2.15 Principles of training and Rehabilitation in sports injuries</p> <p>2.16 Principles of training and Rehabilitation in sports injuries</p>	<p>1.Principles of injury prevention</p>

SW-1 Suggested Sectional Work(SW):

Assignments: Physiological effects of exercise on body systems

Mini Project: Principles of training & Rehabilitation in sports injuries

Other Activities

(Specify): Principles of injury prevention

122BPT45.3: Learn the basic concepts of the physiotherapy management of sports injuries

Hours

Item	Hrs
CI	16
LI	04
SW	01
SL	01
Total	22

Session Out comes(SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO3.1 To Understand PIVD, Kissing spine, cervical</p> <p>SO3.2 To learn about whiplash injuries, facet joint syndrome, SI joint dysfunction</p> <p>SO3.3 To learn about Knee – menisci, cruciate, collateral,</p> <p>SO3.4 Application of Head & face – maxillofacial injuries</p>	<p>1. ITB syndrome</p> <p>2. Leg & ankle – shin splint</p>	<p>UNIT-3 PHYSIOTHERAPY MANAGEMENT OF SPORTS INJURIES</p> <p>3.1 Sports injuries –</p> <p>3.2 Spine –</p> <p>3.3 PIVD,</p> <p>3.4 Kissing spine,</p> <p>3.5 Cervical</p> <p>3.6 Whiplash injuries,</p> <p>3.7 Facet joint syndrome,</p> <p>3.8 SI joint dysfunction,</p> <p>3.9 Hip – muscle strain,</p> <p>3.10 Piriformis syndrome,</p> <p>3.11 ITB syndrome, osteitis pubis, Knee – menisci, cruciate, collateral osteochondritis,</p> <p>3.12 Chondromalacia patellae biceps femoris tendonitis,</p> <p>3.12 Swimmers knee, patello-femoral pain syndrome</p> <p>3.14 Leg & ankle – shin splint, achillis tendonitis & rupture, TA bursitis</p> <p>3.15 Ankle sprain, plantar fasciitis, turf toe syndrome</p> <p>3.16 Head & face – maxillofacial injuries helmet compression syndrome</p>	<p>1. PIVD</p> <p>2. Whiplash injuries</p>

SW-1 Suggested Sectional

Work(SW): Assignments:

Methods of data collection

Mini Project:

Collection data through questionnaires & schedules,

Other Activities (Specify):

Introduction to Computers

122BPT45.4: Recall the basic concepts the renal system, digestive system, nerve muscle and synaptic & junction transmission

Hours

Item	Hrs
CI	16
LI	04
SW	01
SL	01
Total	22

Session Out comes(SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO4.1 To Understand Sports injuries Shoulder</p> <p>SO4.2 To learn about Rotator cuff injury</p> <p>SO4.3 To learn about Pectoralis major rupture</p> <p>SO4.4 Application Acromio-clavicular joint injuries, Elbow – tennis elbow, golfer’s elbow,</p> <p>SO4.5 Analysis of carpal tunnel syndrome, gamekeeper’s thumb</p>	<p>1. Instability, 2. Rotator cuff injury</p>	<p>UNIT-4 PHYSIOTHERAPY MANAGEMENT OF SPORTS INJURIES</p> <p>4.1 Sports Injuries Shoulder 4.2 Sports Injuries Shoulder 4.3 Shoulder instability 4.4 Shoulder instability 4.5 Rotator Cuff Injury 4.6 Biceps Tendonitis And Rupture 4.7 Biceps Tendonitis And Rupture 4.8 Pectoralis Major Rupture 4.9 Scapular Dyskinesis 4.10 Acromio-Clavicular Joint Injuries 4.11 Elbow – Tennis Elbow 4.12 Golfer’s Elbow 4.13 Wrist And Hand 4.14 Carpal Tunnel Syndrome 4.15 Gamekeeper’s Thumb 4.16 Gamekeeper’s Thumb</p>	<p>1. Pectoralis major rupture</p>

SW-1 Suggested Sectional

Work(SW): Assignments:

Scapular dyskinesis

Mini Project: carpal tunnel syndrome,

Other Activities

(Specify):

Carpal Tunnel Syndrome

122BPT45.5: Relate the basic idea of physiotherapy management of special age group sports injuries

Hours

Item	Hrs
CI	16
LI	04
SW	01
SL	01
Total	22

Session Out comes(SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO5.1 To Understand Sports in Special age groups.</p> <p>SO5.2 To learn about Younger athlete</p> <p>SO5.3 To learn about Musculoskeletal problems, management</p> <p>SO5.4 acquire knowledge Children with chronic illness and nutrition</p> <p>SO5.5 Analysis of Risks of exercise in elderly, exercise.</p>	<p>1.Prescription guidelines for elderly</p> <p>2. Sports in Special age groups</p>	<p>UNIT-5 PHYSIOTHERAPY MANAGEMENT OF SPECIAL AGE GROUP SPORTS INJURIES</p> <p>5.1Sports in Special age groups.</p> <p>5.2Sports in Special age groups</p> <p>5.3.Female athletic triad.</p> <p>5.4.Female athletic triad.</p> <p>5.5.Younger athlete.</p> <p>5.6.Younger athlete</p> <p>5.7.Musculoskeletal</p> <p>5.8.Problems, management.</p> <p>5.9.Musculoskeletal</p> <p>5.10.Problems, management</p> <p>5.11.Older athlete- Physiological changes with aging, benefits,</p> <p>5.12.Older athlete- Physiological changes with aging, benefits</p> <p>5.13.Older athlete- Physiological changes with aging, benefits</p> <p>5.14.Older athlete- Physiological changes with aging, benefits</p> <p>5.15.Risks of exercise in elderly, exercise.</p> <p>5.16.Prescription guidelines for elderly.</p> <p>8</p> <p>9</p>	<p>1.Musculoskeletal problems, management</p>

SW-1 Suggested Sectional Work(SW):

Assignments: Younger athlete

Mini Project:

Application of sampling in community

Other Activities (Specify): Risks of exercise in elderly, exercise

Brief of Hours suggested for the Course Outcome

Course Outcomes	Class Lecture (CI)	Sessional Work (SW)	Self-Learning (SI)	Total hour (CI+SW+SI)
122BPT45.1: Define introduction of sports physiotherapy	16	1	1	17
122BPT45.2: Explain the physiological effect of exercise, principle of training and injury prevention	16	1	1	17
122BPT45.3: Illustrate of the physiotherapy management of sports injuries	16	1	1	17
122BPT45.4: Analyze the physiotherapy management of special age group sports injuries	16	1	1	17
122BPT45.5: Evaluate the basic idea of physiotherapy management of special age group sports injuries	16	1	1	17
Total Hours	80	05	05	90

**Suggestion for End Semester Assessment
Suggested Specification Table (For ESA)**

CO	Unit Titles	Marks Distribution				Total Marks
		Ap	An	Ev	Cr	
CO-1	Introduction of sports physiotherapy					
CO-2	the physiological effect of exercise, principle of training and injury prevention					
CO-3	the physiotherapy management of sports injuries					
CO-4	physiotherapy management of sports injuries					
CO-5	physiotherapy management of special age group sports injuries.					
Total						100

Legend: Ap: Apply, An: Analyze, Ev: Evaluate Cr: Create

Note. Detailed Assessment rubric need to be prepared by the course wise teachers for above tasks.
Teachers can also design different tasks as per requirement, for end semester assessment.

Suggested Instructional/Implementation Strategies:

1. Improved Lecture
2. Tutorial
3. Case Method
4. Group Discussion
5. Role Play
6. Visit to hospitals
7. Demonstration

Suggested Learning Resources:

(a) Books:

S. No.	Title	Author	Publisher	Edition & Year
1	Sports Medicine	Morris B. Mellion	: Office, Hanley & Belfus	
2	Sports Medicine for the primary care Physician	Richard B. Birrer,	CRC Press	
3	Current Therapy in Sports Medicine III	Torg, Welsh & Shephard: -	Mosby	
4	Sports Physiotherapy	Zulunga et al.,	W.B. Saunders	
5	Lecture note provided by Faculty of Medical science, AKS University, Satna .			

Curriculum Development Team

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3. Dr Anil kumar mishra Head of the Department, Department of paramedical science
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6. Dr. R.M. Sharma , Professor , Department of paramedical science

CO, POs and PSOs Mapping
Program title: B.P.T (Bachelor of physiotherapy)
Course code: 122BPT45
Course title: Sports Physiotherapy

Course outcomes	Program outcomes												Program specific outcome			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO2	PSO3	PSO4
	Disciplinary knowledge	Psychomotor Skills	Communication skills	Critical thinking	Problem Solving	Analytical reasoning	Research – Related Skills	Co-operation /Team Work	Socio-cultural and multicultural competency	Awareness of moral, ethical and legal issues	Leadership qualities	Ongoing Learning:	Ability to Patient professional care .	Ability to Demonstrate clinical decision patient care	Ability to counsel the patients, family, colleagues and students aspects of physiotherapy treatment.	Ability to Work effectively in various professional collaborative places like hospital.
Co1: Find how to introduce of sports physiotherapy	1	1	2	2	3	2	3	2	2	1	3	2	2	3	3	1
Co2: Apply concepts regarding the physiological effect of exercise, principle of training and injury prevention	1	1	2	2	1	2	3	2	1	1	2	2	2	2	2	1
Co3: Learn the basic concepts of the physiotherapy management of sports injuries	2	2	1	1	2	2	2	1	2	1	2	1	1	2	2	2
Co4: Recall the basic concepts physiotherapy management of special age group sports injuries	3	2	2	2	3	2	3	2	2	1	2	3	1	3	3	2
CO 5:Relate the basic idea of physiotherapy management of special age group sports injuries	.	.	.	1	1	3	3	3	1	1	2	2	1	3	1	3

Legends: 1- Low, 2- Medium, 3- High

Course Curriculum Map

POs & PSOs No.	COs No.& Titles	SOs No.	Laboratory Instruction (LI)	Classroom Instruction(CI)	Self Learning (SL)
PO 1,2,3,4,5,6,7,8,9, 10,11,12, PSO 1,2, 3, 4	CO-1 Define introduction of sports physiotherapy	SO1.1 SO1.2 SO1.3 SO1.4 SO1.5	02	Unit-1. introduction of sports physiotherapy 1,2,3,4,5,6,7	01
PO 1,2,3,4,5,6,7,8,9, 10,11,12 PSO 1,2, 3, 4	CO 2 : Explain the physiological effect of exercise, principle of training and injury prevention	SO2.1 SO2.2 SO2.3 SO2.4 SO2.5	02	Unit-2 physiological effect of exercise, principle of training and injury prevention 1,2,3,4,5,6,7,	01
PO 1,2,3,4,5,6,7,8,9, 10,11,12 PSO 1,2, 3, 4	CO3 Illustrate of the physiotherapy management of sports injuries	SO3.1 SO3.2 SO3.3 SO3.4	02	Unit-3 physiotherapy management of sports injuries 1,2,3,4, 5,6,7,	01
PO 1,2,3,4,5,6,7,8,9, 10,11,12 PSO 1,2, 3, 4	CO 4: Analyze physiotherapy management of special age group sports injuries	SO4.1 SO4.2 SO4.3 SO4.4 SO4.5	02	unit-4 physiotherapy management of sports injuries 1,2,3,4,5, 6,7,8,9	01
PO: 1,2,3,4,5,6,7,8,9, 10,11,12 PSO 1,2, 3, 4	CO 5 Evaluate the basic idea of physiotherapy management of special age group sports injuries	SO5.1 SO5.2 SO5.3 SO5.4 SO5.5	02	Unit 5: paediatrics condition 1,2,3,4,5,6,7,8, 341	01

YEAR IV

Course Code: 122BPT46

Course Title: PT Ethics, management & administration

Pre- requisite: Student should have basic knowledge of Ethics & management in physiotherapy

Rationale: The students studying depending on the PT program or institution. It's best to check with the program you're interested in for their specific requirements. Ability to apply ethical principles to clinical decision-making and Basic knowledge of business management principles.

Course Outcomes:

Course Code:	122BPT46
Course Title:	PT Ethics management and Administration
Course Outcomes:	
122BPT46.1	Find how to introduce the introduction pt ethics
122BPT46.2	Apply concepts regarding the rules of professional conduct and ethical principles,
122BPT46.3	Learn the basic concepts of the health care management and administration
122BPT46.4	Recall the basic concepts the health care planning and administration
122BPT46.5	Relate the basic idea of care organization ,information technology

Scheme of Studies

CODE	Course Code	Course Title	Scheme of studies (Hours/Week)				Total Study Hours (CI+LI+SW+SL)
			C I	LI	SW	SL	
PCC	122BPT46	PT Ethics management and Administration	6	0	1	1	8

- Legend:**
- CI:** Classroom Instruction (Includes different instructional strategies i.e. Lecture (L) and Tutorial (T) and others),
 - LI:** Laboratory Instruction (Includes Practical performances in laboratory workshop, field or other locations using different instructional strategies)
 - SW:** Sessional Work (includes assignment, seminar, mini project etc.),
 - SL:** Self Learning,
 - C:** Credits.

Note: SW & SL has to be planned and performed under the continuous guidance and feedback of teacher to ensure outcome of Learning.

Scheme of Examination

Theory

CODE	Course Code	Course Title	Internal Assessment		University Examination			Total
			Theory	Practical	Theory	Viva	Practical	
PCC	122BP T46	PT Ethics manage ment and Adminis tration	20	--	80	--	--	100

122BPT46.1: Find how to introduce the introduction pt ethics

Hours

Item	Hrs
CI	20
LI	00
SW	01
SL	01
Total	22

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO1.1 To Understand about PT ethics</p> <p>SO1.2 To learn about health care</p> <p>SO1.3 To learn about Ethical principles</p> <p>SO1.4 Medical ethics \$ Professional ethics</p>		<p>Unit-1 INTRODUCTION PT ETHICS</p> <p>1.1History of physiotherapy</p> <p>1.2History of physiotherapy</p> <p>1.3History of physiotherapy</p> <p>1.4Ethical principles in health care,</p> <p>1.5Ethical principles in health care</p> <p>1.6.Ethical principles in health care</p> <p>1.7.Ethical principles in health care</p> <p>1.8. Ethical principles related to physiotherapy, scope of practice,</p> <p>1.9.Promoting quality care</p> <p>1.10.Scope of practice</p> <p>1.11.Enforcing standards in health profession</p> <p>1.12.Professional ethics in research,</p> <p>1.13.education and patient care delivery</p> <p>1.14.education and patient care delivery</p> <p>1.15.education and patient care delivery</p> <p>1.16..education and patient care delivery</p> <p>1.17..education and patient care delivery</p> <p>1.18. Informed consent issues,</p> <p>1.19.1Informed consent issues</p> <p>1.20. Medical ethics and economics in clinical decision-making</p>	<p>1.1 Read and learn about PT ethics</p> <p>1.2 History of physiotherapy</p>

SW-1 Suggested Sectional Work

(SW): Patient care

Assignments:

Ethical principles related to physiotherapy

Mini Project:

Scope Practice in PT ethics

122BPT46.2: Apply concepts regarding the rules of professional conduct and ethical principles,

Item	Hrs
CI	20
LI	00
SW	01
SL	01
Total	22

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO2.1 To Understand Rules of professional conduct</p> <p>SO2.2 To learn about peers relationship with medical and other profession</p> <p>SO2.3 To learn about moral implication.</p> <p>SO2.4 Apply Rule of WHO & WCPT</p> <p>SO2.5 To analyze Rules of professional conduct and scope of practice</p>		<p>UNIT-2 RULES OF PROFESSIONAL CONDUCT AND ETHICAL PRINCIPLE</p> <p>2.1 Rules Of Professional Conduct:</p> <p>2.2 Physiotherapy As A Profession Relationship With Patients Relationship 2.3with Health Care Institutions</p> <p>2.4 Relationship With Colleagues</p> <p>2.5 Peers Relationship With Medical And Other Professional</p> <p>2.6 Concepts Of Morally Ethics,</p> <p>2.7 Legally Rules Of Professional Conduct And Their Medico Legal</p> <p>2.8 Moral Implication.</p> <p>2.9the Need Of Council Act For Physiotherapy Constitution And Functions Of The Indian Association Of Physiotherapist</p> <p>2.10Functioning Of The World Federations Of Physical Therapy(Wcpt) & Its Various Branches.</p> <p>2.11Rule Of WHO & WCPT</p> <p>2.12Confidentiality And Responsibility,</p> <p>2.13Malpractice And Negligence,</p> <p>2.14Provision Of Services And,</p> <p>2.15Advertising,Legal Aspects:</p> <p>2.16Consumer Protection Act</p> <p>2.17 Legal Responsibility Of Physiotherapist For Their Action In Professional Context</p>	<p>1. Laws and legal concepts – protection from malpractice claims , consumer protection act</p>

		<p>2.18 Understanding Liability And Obligations In Case Of Medico-Legal Action</p> <p>2.19 Major ethical principles applied to clinical practice in health care, Laws and legal concepts – protection from malpractice claims , consumer protection act</p> <p>2.20 Rules of professional conduct and scope of practice Personal & professional standards & accreditation Liability & documentation</p>	
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SW-1 Suggested Sectional Work

(SW):Assignments:Concepts of morally ethics

MiniProject:

Confidentiality and responsibility

OtherActivities(Specify):

Personal & professional standards & accreditation

122BPT46.3: Learn the basic concepts of the health care management and administration.

Item	Hrs
CI	20
LI	00
SW	01
SL	01
Total	22

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO3.1 To Understand Planning health care services</p> <p>SO3.2 To learn about Promoting & building a new hospital</p> <p>SO3.3 To learn about, Hospital facilities, staff & services</p> <p>SO3.4 Application of Hospital organization, operational plan and functional plan</p> <p>SO3.5. Organization and management of hospital</p>		<p>UNIT-3 HEALTH CARE MANAGEMENT AND ADMINISTRATION</p> <p>3.1 Planning health care services</p> <p>3.2 Planning health care services</p> <p>3.3 Planning health care services</p> <p>3.4 Promoting & building a new hospital</p> <p>3.5 Promoting & building a new hospital</p> <p>3.6 Promoting & building a new hospital</p> <p>3.7 Technology advances and high quality patient care</p> <p>3.8 Technology advances and high quality patient care</p> <p>3.9 Technology advances and high quality patient care</p> <p>3.10 Hospital facilities, staff & services</p> <p>3.11 Hospital facilities, staff & services</p>	<p>1. Design development, planning and purchase</p> <p>2. Promoting & building a new hospital</p>

		<p>3.12 Hospital facilities, staff & services.</p> <p>3.13 Equipment planning and financial planning</p> <p>3.14 Equipment planning and financial planning</p> <p>3.15 Equipment planning and financial planning</p> <p>3.16 Hospital organization, operational plan and functional plan</p> <p>3.17 Design development, planning and purchase.</p> <p>3.18 Design development, planning and purchase.</p> <p>3.19 Organization and management of hospital</p> <p>3.20 Organization and management of hospital</p>	
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SW-1 Suggested Sectional Work (SW):

Assignments: Planning health care services

Mini Project:

Hospital facilities

Other Activities (Specify):

Hospital organization

**122BPT46.4: Recall the basic concepts the health care planning and administration
Hours**

Item	Hrs
CI	20
LI	00
SW	01
SL	01
Total	22

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO4.1 To understand Planning and administrative services</p> <p>SO4.2 To learn about Human resources management</p> <p>SO4.3 To learn about Nursing service administration</p> <p>SO4.4 Application of Safety & security of the institution</p> <p>SO4.5: Analyze to Disaster management & preparedness</p>		<p>UNIT-4 HEALTH CAREPLANNING AND ADMINISTRATION</p> <p>4.1Planning and administrative services</p> <p>4.2Planning and administrative services</p> <p>4.3Hospital information system</p> <p>4.4Hospital information system</p> <p>4.5Human resources management</p> <p>4.6Human resources management</p> <p>4.7Financial management</p> <p>4.8Financial management</p> <p>4.9Nursing service administration</p> <p>4.10Nursing service administration</p> <p>4.11Public relations & marketing</p> <p>4.12Public relations & marketing</p> <p>4.13Medical & ancillary services</p> <p>4.15Medical & ancillary services</p> <p>4.16Planning & designing supportive services and hospital services</p> <p>4.17Planning & designing supportive services and hospital services</p> <p>4.18Safety & security of the institution</p> <p>4.19Safety & security of the institution</p> <p>4.20Disaster management & preparednessDisaster management & preparednes</p>	<p>1. Public relations & marketing</p> <p>2. Hospital information system</p>

SW-1 Suggested Sectional Work (SW): Assignments: Planning & designing supportive services and hospital services

Mini Project::Safety & security of the institution ,

Other Activities (Specify):

Financial management

122BPT46.5: Relate the basic idea of health care organization, information technology

Item	Hrs
CI	20
LI	00
SW	01
SL	01
Total	22

Session Out comes (SOs)	Laboratory Instruction (LI)	Classroom Instruction (CI)	Self Learning (SL)
<p>SO5.1 To Understand Management studies related in local health care organization management</p> <p>SO5.2 To learn Time management and carrier development in physiotherapy</p> <p>SO5.3 To learn about Faculty planning – academic and clinical setups</p> <p>SO5.4 Application of Budget planning for physiotherapy services in various setups. Resuscitation,</p> <p>SO5.5 Application of Public relation and marketing reaching media marketing of physiotherapy practice</p>		<p>UNIT-5 HEALTHCARE ORGANIZATION, INFORMATION TECHNOLOGY</p> <p>5.1 Health Care and structure planning delivery with quality assurance and finding of service delivery</p> <p>5.2 Health Care and structure planning delivery with quality assurance and finding of service delivery</p> <p>5.3 Health Care and structure planning delivery with quality assurance and finding of service delivery</p> <p>5.2 Information technology in professional practical.</p> <p>5.3 Information technology in professional practical Time management and carrier development in physiotherapy.</p> <p>5.4 Time management and carrier development in physiotherapy</p> <p>2.7 Administration principles based on the goals and function for large hospital setups, domiciliary service ,private clinics and academic setups .</p> <p>2.8 Administration principles based on the goals and function for large hospital setups, domiciliary service ,private clinics and academic setups</p> <p>2.9 Faculty planning – academic and clinical setups</p>	<p>1. Information technology in professional practical.</p>

		<p>2.10 Faculty planning – academic and clinical setups</p> <p>2.11 Methods of maintaining records and documentation.</p> <p>2.12 Methods of maintaining records and documentation</p> <p>2.13 Budget planning for physiotherapy services in various setups.</p> <p>2.14 Performance analysis physical structure reporting system (man power, status, function) quantity and</p> <p>2.15 Quality of service turnover cost benefits and revenue contribution.</p> <p>2.16 Public relation</p> <p>2.17 Marketing reaching media</p> <p>2.18 Marketing of physiotherapy practice</p> <p>2.19 Strengthening of brand identity with consumer</p> <p>2.20 Strengthening of brand identity with consumer</p> <p>2.21 Strengthening of brand identity with consumer</p> <p>2.22 Other health care professionals</p> <p>2.23 Other health care professionals</p>	
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SW-1 Suggested Sectional Work

(SW): Assignments:

Faculty planning – academic and clinical setups

Mini Project:

Pulse-Polio

Programmes

Other Activitie(Specify):

Public relation

Brief of Hours suggested for the Course Outcome

Course Outcomes	Class Lecture (CI)	Sessional Work (SW)	Self-Learning (SI)	Total hour (CI+SW+SI)
122BPT46.1: Define introduction pt ethics	20	1	1	22
122BPT46.2: Explain the overview of the rules of professional conduct and ethical principles .	20	1	1	22
122BPT46.3: Illustrate the concept of health care management and administration	20	1	1	22
122BPT46.4: Analyze the significance of health care planning and administration .	20	1	1	22
122BPT46.5: Evaluate the Health care organization ,information technology	20	1	1	22
Total Hours	100	05	05	110

Suggestion for End Semester Assessment

Suggested Specification Table (For ESA)

CO	Unit Titles	Marks Distribution				Total Marks
		Ap	An	Ev	Cr	
CO-1	Introduction Pt Ethics					
CO-2	Overview Of The Rules Of Professional Conduct And Ethical Principles					
CO-3	Organizing And Health Care Management And Administration					
CO-4	Importance Of Organizational Health Care Planning And Administration .					
CO-5	Health Care Organization ,Information Technology.					
Total						20

Legend: Ap: Apply, An: Analyze, Ev: Evaluate Cr: Create

Note. Detailed Assessment rubric need to be prepared by the course wise teachers for above tasks. Teachers can also design different tasks as per requirement, for end semester assessment.

Suggested Instructional/Implementation Strategies:

1. Improved Lecture
2. Tutorial
3. Case Method
4. Group Discussion
5. Role Play
6. Visit to hospitals
7. Demonstration

Suggested Learning Resources:

(a) Books:

S. No.	Title	Author	Publisher	Edition & Year
1	Managerial and supervisory principles for physical therapists	hardcover, nosse larry j.	Nosse larry j.	2009
2	hospital administration and management: a comprehensive	gupta joydeep das	Jaypee Brothers Medical Publishers	2023
3	Textbook of medical administration and leadership	loh, erwin, long, paul w., spurgeon, peter	Springer Np	2023
4	Essentials of community physiotherapy & ethic	prof. (dr.) Rajendra rajput	Jaypee Brothers Medical Publishers	2017
5	Lecture note provided by Faculty of Medical science, AKS University, Satna .			

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6. Dr. R.M. Sharma , Professor , Department of paramedical science

CO, POs and PSOs Mapping
Program title: B.P.T (Bachelor of physiotherapy)
Course code122BPT46
Course title: PT Ethics management and Administration

Course outcomes	Program outcomes												Program specific outcome			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO2	PSO3	PSO4
	Disciplinary knowledge	Psychomotor Skills	Communication skills	Critical thinking	Problem Solving	Analytical reasoning	Research – Related Skills	Co-operation /Team Work	Socio-cultural and multicultural competency	Awareness of moral, ethical and legal issues	Leadership qualities	Ongoing Learning:	Ability to Patient professional care .	Ability to Demonstrate clinical decision and patient care	Ability to counsel the patients, family,colleagues and students aspects of physiotherapy treatment.	Ability to Work effectively in various professional collaborative places like hospital.
CO 1: Find how to introduce the introduction pt ethics	1	1	2	2	3	2	1	2	2	1	3	2	2	.	3	1
co2 Apply concepts regarding the rules of professional conduct and ethical principles,principles,	1	1	2	2	1	2	.	2	1	1	2	2	2	.	2	1
CO3 Learn the basic concepts of the health care management and administration	2	2	1	1	2	2	2	1	2	1	2	1	1	2	2	2
CO4 Recall the basic concepts the health care planning and administration	3	2	2	2	3	2	1	2	2	1	2	2	1	1	3	2
CO5: : Relate the basic idea of Health care organization ,information technology	.	.	.	1	1	3	.	3	1	1	2	2	1	1	1	3

Course Curriculum Map: BPT 4^{Nth}YEAR

POs & PSOs No.	COs No.& Titles	SOs No.	Laboratory Instruction (LI)	Classroom Instruction(CI)	Self Learning (SL)
PO 1,2,3,4,5,6,7,8, PSO 1,2, 3, 4	CO-1 Define introduction pt ethics	SO1.1 SO1.2 SO1.3 SO1.4	02	unit-1. Introduction PT ethics 1,2,3,4,5,6,7, 8,9,410,11,12,13,14,15,16,17,18,19,20	02
PO 1,2,3,4,5,6,7,8, PSO 1,2, 3, 4	CO 2 : Explain the overview of the rules of professional conduct and ethical principles .	SO2.1 SO2.2 SO2.3 SO2.4 SO2.5	02	unit-2 Rules of professional conduct and ethical principle 1,2,3,4,5,6,7, 8,9,410,11,12,13,14,15,16,17,18,19,20	03
PO 1,2,3,4,5,6,7,8 PSO 1,2, 3, 4	CO3 : Illustrate the concept of health care management and administration	SO3.1 SO3.2 SO3.3 SO3.4	02	unit-3 health care management and administration 1,2,3,4,5,6,7, 8,9,410,11,12,13,14,15,16,17,18,19,20	02
PO 1,2,3,4,5,6,7,8, PSO 1,2, 3, 4	CO 4: Analyze the significance of health care planning and administration	SO4.1 SO4.2 SO4.3 SO4.4	02	unit-4 health care planning and administration 1,2,3,4,5,6,7, 8,9,410,11,12,13,14,15,16,17,18,19,20	02
PO: 1,2,3,4,5,6,7,8, PSO 1,2, 3, 4	CO 5 Evaluate the Health care organization ,information technology	SO5.1 SO5.2 SO5.3 SO5.4 SO5.5	02	unit 5: health care organization,information technology 1,2,3,4,5,6,7, 8,9,410,11,12,13,14,15,16,17,18,19,20	03

