

**LEARNING OUTCOME BASED VOCATIONAL CURRICULUM**

**CLASS 11 & 12**

**SECTOR:  
HEALTH CARE**

**JOB ROLE**

**ASSISTANT PHYSIOTHERAPIST**

**(QUALIFICATION PACK: REF. ID. HSS/Q7701)**



**State Council of Educational Research & Training (SCERT) Kerala**

(Department of General Education, Government of Kerala)

Vidhya Bhavan, Poojappura, Thiruvananthapuram





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[www.scert.kerala.gov.in](http://www.scert.kerala.gov.in)



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## FOREWORD

A collaborative initiative for developing learning outcome based vocational curriculum and courseware aimed at integrating both vocational and general qualifications has been implemented by the State Council of Educational Research and Training (SCERT) Kerala and the PSSCIVE Bhopal. This is intended to open up pathways of career progression for students and the SCERT Kerala is developing curricula under the project as an integral part of Vocationalisation of Education under Samagra Shiksha, approved by the Government of Kerala. Decisive improvement in the teaching-learning process and working competencies through learning outcomes that have been judiciously embedded in the vocational subject is expected to be the major impact that will be brought about by the learning outcome based vocational curriculum.

It is a matter of great pleasure to introduce this learning outcome based vocational curriculum as part of the vocational training package for the job role of Assistant Physiotherapist (HSS/Q7701). The curriculum has been developed for the higher secondary students of vocational education and is aligned to the National Occupation Standards (NOSs) of a job role identified and approved under the National Skill Qualification Framework (NSQF).

The key aim of the curriculum will be to provide children with employability and vocational skills that would in turn aid occupational mobility and lifelong learning. A major transformation in the teaching process is also aimed at, which will be brought about through interactive sessions in classrooms, practical activities in laboratories and workshops, projects, field visits, and professional experiences.

The curriculum has been meticulously developed and judiciously reviewed by a group of experts and their much-valued contributions are immensely acknowledged. The imminent utility of the curriculum will without doubt, be adjudged by the qualitative improvement that it brings about in teaching-learning. The feedback and suggestions on the content by the teachers and other stakeholders will be of immense value to us in bringing about further enhancement and augmentation to this document.

**Dr. J Prasad**

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## **ACKNOWLEDGEMENTS**

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We are extremely thankful to Dr. RVG Menon, Chairperson, High Power Committee for the implementation of NSQF in Kerala, Dr.Sukesh Kumar, Former Principal, Government Engineering College Palakkad and Sri. G S Unnikrishnan Nair, Former Director State Agricultural Management and Extension Training Institute (SAMETI), Thiruvananthapuram for their mentorship in the process of developing this document. The contributions made by Dr. Vinay Swarup Mehrotra, Professor and Head, Curriculum Development and Evaluation Centre (CDEC), PSSCIVE Bhopal in development of the curriculum are duly acknowledged.

We are grateful to the experts for their earnest efforts and contributions in the development of this learning outcome based vocational curriculum. Their names are acknowledged in the list of contributors.

We are grateful to the Vocational Higher Secondary wing of the Directorate of General Education (DGE) Kerala for extending the support to develop this curriculum document on time by providing the service of its teaching staff.



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## 1. COURSE OVERVIEW

### COURSE TITLE: ASSISTANT PHYSIOTHERAPIST

#### GENERAL OBJECTIVES

The Assistant Physiotherapist assist qualified physiotherapists in the rehabilitation of patients suffering from injuries, illness, or disabilities. Learner of this course will be able to assist physiotherapist in electro therapy and exercise therapy clinics and in clinical or hospital set up in treatment of various conditions. Student will achieve basic knowledge about various neurological, orthopaedic, paediatric, and geriatric conditions seen in physiotherapy clinics.

On successful completion of this course, the learners are expected to develop skills;

- to provide general instructions to the clients prior to treatment.
- to prepare the patient for treatment
- to arrange the treatment set up.
- to check, clean and maintain the physiotherapy equipment in a clinical/hospital setup
- to assist the physiotherapist in providing the treatment
- to transfer of patients from bed to chair and vice versa

#### COURSE OUTCOMES

*On completion of the course, students should be able to;*

- apply effective oral and written communication skills to interact with people and customers
- identify the principal components of a computer system
- demonstrate the basic skills of using computer
- demonstrate self-management skills
- demonstrate the ability to provide a self-analysis in context of entrepreneurial skills and abilities
- demonstrate the knowledge of the importance of green skills in meeting the challenges of sustainable development and environment protection.
- explain the scope of Physiotherapy, occupational therapy and medical rehabilitation
- explain the duties and responsibilities of physical therapist assistant (PTA).
- explain the Basics of human anatomy and Physiology
- develop skills in Measurements of vital signs
- explain and report changes in health status of the patient
- explain the basics of Exercise therapy and identify various Exercise therapy equipment.
- explain the basics of Electro therapy and identify various Electrotherapy equipment.

- develop skill in preparing patient for various electrotherapy and exercise therapy management
- develop skill in assisting patient in mobility and transfers.
- explain common medical terminologies and medical conditions
- develop skill in preparing patient for cryotherapy and thermotherapy
- demonstrate the application of commonly used orthotics and prosthetics
- develop fundamental knowledge in infection control.
- develop skills in prevention of occupational Hazards.

### COURSE REQUIREMENTS

The learner should have the basic knowledge of science.

**COURSE DURATION: 600 hrs**

Class 11	300 hrs
Class 12	300 hrs
<b>Total</b>	<b>600 hrs</b>

## 2. SCHEME OF UNITS

*The unit-wise distribution of hours and scores for Class 11 is as follows:*

CLASS 11			
	Units	No. of Hours for Theory and Practical = 300	Max. Scores for Theory and Practical =100
<b>Part A</b>	<b>Employability Skills</b>		
1.	Communication Skills – III	25	<b>10</b>
2.	Self-management Skills – III	25	
3.	Information and Communication Technology Skills – III	20	
4.	Entrepreneurial Skills – III	25	
5.	Green Skills – III	15	
	<b>Total</b>	<b>110</b>	<b>10</b>
<b>Part B</b>	<b>Vocational Skills</b>		
6.	Unit 01: Introduction to Physiotherapy	16	
7.	Unit 02: Basics of Anatomy and Physiology	87	
8.	Unit 03: Introduction to Exercise Therapy (Part-1)	40	
9.	Unit 04: Introduction to Infection Control and Occupational Hazards	22	
	<b>Total</b>	<b>165</b>	<b>40</b>

<b>Part C</b>	<b>Practical Work</b>		
	Practical Examination	06	15
	Written Test	01	10
	Viva Voce	03	10
	<b>Total</b>	<b>10</b>	<b>35</b>
<b>Part D</b>	<b>Project Work/Field Visit/ OJT</b>		
	Practical File/Student Portfolio	10	10
	Viva Voce	05	05
	<b>Total</b>	<b>15</b>	<b>15</b>
	<b>Grand Total</b>	<b>300</b>	<b>100</b>

The unit-wise distribution of hours and scores for Class 12 is as follows:

<b>CLASS 12</b>			
	<b>Units</b>	<b>No. of Hours for Theory and Practical =300</b>	<b>Max. scores for Theory and Practical = 100</b>
<b>Part A</b>	<b>Employability Skills</b>		
1.	Communication Skills – IV	25	<b>10</b>
2.	Self-management Skills – IV	25	
3.	Information and Communication Technology Skills – IV	20	
4.	Entrepreneurial Skills – IV	25	
5.	Green Skills – IV	15	
	<b>Total</b>	<b>110</b>	<b>10</b>
<b>Part B</b>	<b>Vocational Skills</b>		
6.	Unit 01: Introduction to Exercise Therapy (Part-2)	51	
7.	Unit 02: Introduction to Chest Physiotherapy	12	
8.	Unit 03: Introduction to Electrotherapy	46	
9.	Unit 04: Introduction to Orthopaedic conditions	19	
10.	Unit 05: Introduction to Neurological conditions	24	
11.	Unit 6: Introduction to Orthotics and Prosthetics	13	
	<b>Total</b>	<b>165</b>	<b>40</b>
<b>Part C</b>	<b>Practical Work</b>		
	Practical Examination	06	15
	Written Test	01	10
	Viva Voce	03	10
	<b>Total</b>	<b>10</b>	<b>35</b>
<b>Part D</b>	<b>Project Work/Field Visit/OJT</b>		
	Practical File/Student Portfolio	10	10
	Viva Voce	05	05
	<b>Total</b>	<b>15</b>	<b>15</b>
	<b>Grand Total</b>	<b>300</b>	<b>100</b>

### 3. LEARNING OUTCOME BASED ACTIVITIES

Classroom, Laboratory/workshop and field are the key spots where teaching and learning take place. Classroom and laboratory-based teaching and learning facilitate knowledge creation whereas field visits open venues for free interaction with experts and also helps acquaint learners with various tools, materials, equipment procedures and operations in the workplace. While considering these intensified ways of knowledge acquisition, emphasis should also be laid on the occupational safety, health and hygiene of the participants.

#### **Classroom activities**

Classroom activities are mainly interactive lecture sessions, followed by discussions and doubt clarifications. Classes are handled by trained vocational teachers and this is considered as an integral part of the course. The most attractive feature of the class is that the classes are in tune with the outcome-based curriculum. Teaching learning processes are well planned and implemented. Teaching learning materials such as audio-visual materials, colour slides, charts, diagrams, models, exhibits, handouts, on-line teaching materials etc., have been incorporated in accordance with the topic and this may help the teachers to impart the content in an effective manner.

#### **Practical work in Laboratory / Workshop**

Practical work is usually performed to enhance the skills of the learners which are indeed essential for them to become specialized technicians. Practical sessions may include hands on training, simulation training, role-play, case-based studies and exercises. Equipment and other appliances are available for use in abundance. Trained personnel teach and exercise specialized techniques. Practical classes involving laboratory/workshop are well planned with tools, equipment, materials and also other skill acquisition activities. Vocational teachers should submit the plan of laboratory/workshop work in advance to the head of the institution and get it sanctioned prior to use.

#### **Field visits/ Educational Tour**

Field visit is one of the ways and means of learning outside the classroom. It promotes knowledge acquisition by giving opportunity to learners to interact with renowned experts and to make observations of the activities performed by them. An observation check list may help the students to ensure the collection of required information and its analysis for further use. This may be developed with the help of vocational teachers who are in charge of outdoor learning activities. All the field visits are well planned by taking into consideration of the learning requirements, distance to travel, time, health and hygiene. The Principal and teachers should plan to implement at least three field visits within a year by making all necessary arrangements.

#### **Virtual Field Visits, Expert Interactions and Practical Activities**

With the rapid potentials offered by information technology in digital classrooms, the extent of virtual field visits, online expert interactions and online demonstrations cum practical activities can

be worked out. It may be helpful amid the current Covid 19 pandemic scenario. A State level cluster of teachers and experts in the concerned subject can be pooled together for the purpose. The guidelines for such activities can be issued by the concerned SCERTs.

### **Suggested Topics for Expert Interaction**

1. The scope of aerobic and anaerobic exercises
2. Role of physiotherapist in Postural correction
3. Role of an Occupational Therapist in treatment team
4. Concept of Rehabilitation and Rehab team
5. Role of physiotherapy assistant in gait and gait training
6. Prevention and control of infective disease
7. Effects of exercise on different body systems
8. Prevention and management of complications of chronic bed ridden patients.
9. Importance of chest physiotherapy in respiratory diseases
10. Role of electrotherapy modalities in pain management
11. Role of Orthotics and prosthetics in Rehabilitation

## **4. ASSESSMENT AND CERTIFICATION**

The National Skill Qualification Framework (NSQF) is based on outcomes rather than inputs referred by the National Occupation Standards (NOSs). Learning outcomes, as per the NSQF level descriptors, include the Process, Professional Knowledge, Professional Skills, Core Skills and Responsibility. Knowledge in the job of a learner shall be the basis of assessment. It would also be considered if the learning program undertaken by the learner has delivered the required output. Certification is based on required standards so that the learner and the employer could come to know about the competency attained in the vocational subject/ course. In order to make the assessment reliable, valid, flexible, convenient, cost effective, fair and transparent standardised assessment tools are to be used. Technology assisted assessment process is in vogue now.

### **Knowledge Assessment (Theory)**

Knowledge Assessment usually includes two components – Internal Assessment and External Assessment. External assessment includes theory examination conducted by the concerned examination Boards. Tools for assessment contain components for testing the application of knowledge. Knowledge testing can be performed by making use of either objective or short answer type paper-based test. Source of the questions should be the content of the curriculum.

## Written Test

A group, comprising of academicians, experts from existing vocational subject experts / teachers, subject experts from University/ College or from the industry prepare theory question paper for the vocational subjects. A panel of experts for question paper setting and conducting examination should be formed by the respective central / state boards. Written tests allow the learners to demonstrate that they have acquired the necessary knowledge and skill in the given topics.

*The blue print for the question paper may be as follows:*

**Duration: 3 hrs**

**Maximum Scores: 50**

No. of Questions					
	Typology of Question	Very Short Answer (1 Score)	Short Answer (2 Scores)	Long Answer (3 Scores)	Scores
1.	Remembering – (Knowledge based simple recall questions, to know specific facts, terms, concepts, principles, or theories; identify, define or recite, information)	3	3	3	18
2.	Understanding – (Comprehension – to be familiar with meaning and to understand conceptually, interpret, compare, contrast, explain, paraphrase, or interpret information)	2	4	3	19
3.	Application – (Use abstract information in concrete situation, to apply knowledge to new situations: Use given content to interpret a situation, provide an example, or solve a problem)	0	2	1	07
4.	High Order Thinking Skills – (Analysis and Synthesis – Classify, compare, contrast, or differentiate between different pieces of information; Organize and/ or integrate unique pieces of information from a variety of sources)	0	2	0	04
5.	Evaluation – (Appraise, judge, and/or justify the value or worth of a decision or outcome, or to predict outcomes based on values)	0	1	0	02
	<b>Total</b>	<b>5x1=5</b>	<b>12x2=24</b>	<b>7x3=21</b>	<b>50 (24 questions)</b>



**Skill Assessment (Practical)**

Skill assessment should be done by considering the practical demonstration of skills by the candidate. It is assessed by making use of a competency checklist prepared by experts. The competency checklist should be developed as per the National Occupation Standards (NOSs). This should be in tune with the qualification pack for the Job Role to ensure necessary consistency in the quality of assessment across different sectors and institutions. As per the performance criteria defined in the National Occupation Standards, the students have to demonstrate their competencies in front of the examiners. Assessment will indicate whether they are competent or incompetent. The assessors assessing the skills of the students should possess enough industrial experience and should have undergone a rigorous training in assessment principles and practices. The Sector Skill Councils (SSCs) should ensure that the assessors are given the required training on the assessment of competencies.

The demonstration of knowledge and skill in performing a task of the learners, is the purpose of the practical examination. This include practical examination where hands on experience will be displayed and a viva voce. A team of two evaluators, one a subject teacher and the other an expert from the relevant industry certified by the relevant Board or SSCs concerned can conduct practical examination as well as viva voce.

**Project Work**

Project is an efficient strategy to assess the practical skills acquired along a certain timeline. Project is chosen and given to candidates only on the basis of their capabilities, because it needs specific skills. It is performed step by step and the first and foremost step is classroom discussion and selection of the topic for the project. After fixing the topic and objectives, the methodology of the project work should be decided during the classroom discussions. Monitoring and evaluation should be done at each stage. Proper feedback shall be provided to the learners for improvement and innovation. Field visits can be organized as part of the project work. The data collected may be used for presentations and report writing. Accuracy of the data is to be ensured. The entire project work is maintained as a practical work file or as student's portfolio.

**Student Portfolio**

It is a document that supports the candidate claim of competencies acquired as a part of the teaching learning process. The student portfolio is a compilation of project reports, articles, photos of products prepared by the student.

**Viva Voce**

Viva voce provides chance to each candidate to demonstrate communication skills and content knowledge. It is a way of obtaining feedback on the student's experience, learning, project work

and field visit. Audio visual recording of the whole procedure can be done for future reference and documentation. A Board, including external examiners, is constituted as per the norms which in turn should be suitably adapted to the specific requirement of the vocational subjects.

The central/state examination board for secondary education and the respective Sector Skill Councils can certify the competencies of the learner upon the successful completion of the course.

## 5. UNIT CONTENTS

### CLASS 11

#### Part A: Employability Skills

Sl.No.	Units	Duration (hrs)
1.	Communication Skills- III	25
2.	Self-management Skills – III	25
3.	Information and Communication Technology Skills - III	20
4.	Entrepreneurial Skills – III	25
5.	Green Skills – III	15
<b>Total</b>		<b>110</b>

#### Unit 1: Communication Skill– III

Expected Learning Outcome	Theory (10 hrs)	Practical (15 hrs)	Duration (25 hrs)
1. Demonstrate knowledge of various methods of communication	<ul style="list-style-type: none"> <li>➤ Methods of communication</li> <li>• Verbal</li> <li>• Non-verbal</li> <li>• Visual</li> </ul>	<ul style="list-style-type: none"> <li>• Writing pros and cons of written, verbal and non-verbal communication</li> <li>• Listing do's and don'ts for avoiding common body language mistakes</li> </ul>	05
2. Identify specific communication styles	<ul style="list-style-type: none"> <li>➤ Communication styles- assertive, aggressive, passive-aggressive, submissive, etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Observing and sharing communication styles of friends, teachers and family members and adapting the best practices</li> <li>• Roleplays on communication styles.</li> </ul>	10
3. Demonstrate basic writing skills	<ul style="list-style-type: none"> <li>➤ Writing skills to the following:</li> <li>• Sentence</li> <li>• Phrase</li> <li>• Kinds of Sentences</li> <li>• Parts of Sentence</li> <li>• Parts of Speech</li> <li>• Articles</li> <li>• Construction of a Paragraph</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstration and practice of writing sentences and paragraphs on topics related to the subject</li> </ul>	10
<b>Total</b>			<b>25</b>

<b>Unit 2: Self-Management – III</b>			
<b>Expected Learning Outcome</b>	<b>Theory (10 hrs)</b>	<b>Practical (15 hrs)</b>	<b>Duration (25 hrs)</b>
1. Demonstrate impressive appearance and grooming	<ul style="list-style-type: none"> <li>Describe the importance of dressing appropriately, looking decent and positive body language</li> <li>Describe the term grooming</li> <li>Prepare a personal grooming checklist</li> <li>Describe the techniques of self- exploration</li> </ul>	<ul style="list-style-type: none"> <li>Demonstration of impressive appearance and groomed personality</li> <li>Demonstration of the ability to self- explore</li> </ul>	10
2. Demonstrate teamwork skills	<ul style="list-style-type: none"> <li>Describe the important factors that influence in team building</li> <li>Describe factors influencing teamwork</li> </ul>	<ul style="list-style-type: none"> <li>Group discussion on qualities of a good team</li> <li>Group discussion on strategies that are adopted for team building and teamwork</li> </ul>	10
3. Apply time management strategies and techniques	<ul style="list-style-type: none"> <li>Meaning and importance of time management – setting and prioritizing goals, creating a schedule, making lists of tasks, balancing work and leisure, using different optimization tools to break large tasks into smaller tasks.</li> </ul>	<ul style="list-style-type: none"> <li>Game on time management</li> <li>Checklist preparation</li> <li>To-do-list preparation</li> </ul>	05
<b>Total</b>			<b>25</b>

<b>Unit 3: Information and Communication Technology - III</b>			
<b>Expected Learning Outcome</b>	<b>Theory (08 hrs)</b>	<b>Practical (12 hrs)</b>	<b>Duration (20 hrs)</b>
1. Create a document on word processor	<ul style="list-style-type: none"> <li>Introduction to word processing.</li> <li>Software packages for word processing.</li> <li>Opening and exiting the word processor.</li> <li>Creating a document</li> </ul>	<ul style="list-style-type: none"> <li>➤ Demonstration and practice of the following:               <ul style="list-style-type: none"> <li>Listing the features of word processing</li> <li>Listing the software packages for word processing</li> <li>Opening and exit the word processor</li> <li>Creating a document</li> </ul> </li> </ul>	10
2. Edit, save and print a document in word	<ul style="list-style-type: none"> <li>Editing text</li> <li>Wrapping and aligning</li> </ul>	<ul style="list-style-type: none"> <li>Demonstration and practising the</li> </ul>	10

processor	<p>the text</p> <ul style="list-style-type: none"> <li>• Font size, type and face</li> <li>• Header and Footer</li> <li>• Auto correct</li> <li>• Numbering and bullet</li> <li>• Creating table</li> <li>• Find and replace</li> <li>• Page numbering</li> <li>• Printing document</li> <li>• Saving a document in various formats</li> </ul>	<p>following:</p> <ul style="list-style-type: none"> <li>• Editing the text</li> <li>• Word wrapping and alignment</li> <li>• Changing font type, size and face</li> <li>• Inserting header and footer</li> <li>• Removing header and footer</li> <li>• Using autocorrect option</li> <li>• Insert page numbers and bullet</li> <li>• Save and print a document</li> </ul>	
<b>Total</b>			<b>20</b>

Unit 4: Entrepreneurial Skills – III			
Expected Learning Outcome	Theory (10 hrs)	Practical (15 hrs)	Duration (25 hrs)
1. Describe the significance of entrepreneurial values and attitude	<ul style="list-style-type: none"> <li>• Values in general and entrepreneurial values</li> <li>• Entrepreneurial value orientation with respect to innovativeness, independence, outstanding performance, and respect for work</li> </ul>	<ul style="list-style-type: none"> <li>• Listing of entrepreneurial values by the students.</li> <li>• Group work on identification of entrepreneurial values and their roles after listing or reading 2-3 stories of successful entrepreneur</li> <li>• Exhibiting entrepreneurial values in Ice breaking, rapport building, group work and home assignments</li> </ul>	10
2. Demonstrate the knowledge of attitudinal changes required to become an entrepreneur	<ul style="list-style-type: none"> <li>• Attitudes in general and entrepreneurial attitudes</li> <li>• Using imagination/ intuition</li> <li>• Tendency to take moderate risk</li> <li>• Enjoying freedom of expression and action</li> <li>• Looking for economic opportunities</li> <li>• Believing that we can</li> </ul>	<ul style="list-style-type: none"> <li>• Preparing a list of factors that influence attitude in general and entrepreneurial attitude</li> <li>• Demonstrating and identifying own entrepreneurial attitudes during the following micro lab activities like</li> </ul>	15

## ASSISTANT PHYSIOTHERAPIST

	<ul style="list-style-type: none"> <li>change the environment</li> <li>Analyzing situation and planning action</li> <li>Involving in activity</li> </ul>	<ul style="list-style-type: none"> <li>thematic appreciation test</li> <li>Preparing a short write-up on “who am I”</li> <li>Take up a product and suggest how its features can be improved</li> <li>Group activity for suggesting brand names, names of enterprises, etc.</li> </ul>	
<b>Total</b>			<b>25</b>

Unit 5: Green Skills – III			
Expected Learning Outcome	Theory (07 hrs)	Practical (08 hrs)	Duration (15 hrs)
1. Describe importance of main sector of green economy	<ul style="list-style-type: none"> <li>Main sectors of green economy- E-waste management, green transportation, renewal energy, green construction, water management</li> <li>Policy initiatives for greening economy in India</li> </ul>	<ul style="list-style-type: none"> <li>Preparing a poster on any one of the sectors of green economy</li> <li>Writing a two-page essay on important initiatives taken in India for promoting green economy</li> </ul>	08
2. Describe the major green Sectors/Areas and the role of various stakeholder in green economy	<ul style="list-style-type: none"> <li>Stakeholders in green economy</li> <li>Role of government and private agencies in greening cities, buildings, tourism, industry, transport, renewable energy, waste management, agriculture, water, forests and fisheries</li> </ul>	<ul style="list-style-type: none"> <li>Preparing posters on green Sectors/Areas: cities, buildings, tourism, industry, transport, renewable energy, waste management, agriculture, water, forests and fisheries</li> </ul>	07
<b>Total</b>			<b>15</b>

### PART B: VOCATIONAL SKILLS

Sl.No.	Units	Duration (hrs)
1	Unit 01: Introduction to Physiotherapy	16
2	Unit 02: Basics of Anatomy and Physiology	87
3	Unit 03: Introduction to Exercise Therapy (Part-1)	40
4	Unit 04: Introduction to Infection Control and Occupational Hazards	22
<b>Total</b>		<b>165</b>

<b>Unit 1: Introduction to Physiotherapy</b>			
<b>Expected Learning Outcome</b>	<b>Theory (6 hrs)</b>	<b>Practical (10 hrs)</b>	<b>Duration (16 hrs)</b>
1. Explain the definition, scope, and general goals of physiotherapy	<ul style="list-style-type: none"> <li>• Definition of physiotherapy</li> <li>• History of Physiotherapy</li> <li>• Scope of physiotherapy</li> <li>• General goals of physiotherapy</li> </ul>	<ul style="list-style-type: none"> <li>• Video Presentation</li> </ul>	1
2. Explain the different specialities of physiotherapy and its importance	<ul style="list-style-type: none"> <li>• Different Specialities of physiotherapy</li> <li>• Orthopaedics</li> <li>• Neurology</li> <li>• Cardio-Respiratory</li> <li>• Paediatrics</li> <li>• Sports Physiotherapy</li> <li>• Geriatrics</li> </ul>	<ul style="list-style-type: none"> <li>• Observe and list the common conditions handled by various specialities of physiotherapy</li> </ul>	3
3. Explain the definition of occupational therapy, and its general goals of treatment.	<ul style="list-style-type: none"> <li>• Definition of occupational therapy</li> <li>• General goals of occupational therapy</li> </ul>	<ul style="list-style-type: none"> <li>• Observe the duties of an assistant in occupational therapy</li> </ul>	3
4. List out the role of physiotherapy assistant in various physiotherapy settings	<ul style="list-style-type: none"> <li>• General Data Collection</li> <li>• Role of physiotherapy assistant in hospitals</li> <li>• Geriatric care</li> <li>• Palliative care</li> <li>• Sports and fitness</li> </ul>	<ul style="list-style-type: none"> <li>• Observe the role of physiotherapy assistant in hospitals, geriatric care centres, palliative care centres and sports and fitness centre</li> </ul>	3
5. Explain the concept of medical rehabilitation.	<ul style="list-style-type: none"> <li>• Different phases of medical rehabilitation</li> <li>• Rehabilitation team and effective team work</li> <li>• Community Based Rehabilitation (CBR ) and Institution Based Rehabilitation (IBR)</li> <li>• Patient rights</li> </ul>	<ul style="list-style-type: none"> <li>• Observe and list the duties of each and every members of a medical rehabilitation team</li> </ul>	6
<b>Total</b>			<b>16</b>

<b>Unit 2: Basics of Human Anatomy and Physiology</b>			
<b>Expected Learning Outcome</b>	<b>Theory (37hrs)</b>	<b>Practical (50hrs)</b>	<b>Duration (87 hrs)</b>
1. Describe human Anatomy and Physiology	<ul style="list-style-type: none"> <li>• Definition of anatomy</li> <li>• Anatomical positions</li> <li>• Definition of Physiology</li> <li>• Name the systems of human body and its functions</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate and practice anatomical position.</li> </ul>	5
2. Explain the regional and directional terms of human body	<ul style="list-style-type: none"> <li>• Regional Terms</li> <li>• Upper limb</li> <li>• Lower limb</li> <li>• Trunk</li> <li>• Head and neck</li> <li>• Directional Terms</li> <li>• Anterior/Posterior (Dorsal/ventral)</li> <li>• Medial/Lateral</li> <li>• Superior/Inferior</li> <li>• Proximal/Distal</li> <li>• Cranial/Caudal</li> </ul>	<ul style="list-style-type: none"> <li>• Identify the different regions of human body.</li> <li>• Demonstrate the different directional terms</li> </ul>	8
3. Demonstrate Various movements of body	<p>Explain the following movements</p> <ul style="list-style-type: none"> <li>• Flexion/Extension</li> <li>• Abduction/Adduction</li> <li>• Medial rotation/Lateral rotation (Internal and External Rotation)</li> <li>• Circumduction</li> <li>• Supination/Pronation</li> <li>• Elevation and Depression</li> <li>• Protraction/Retraction</li> <li>• Dorsiflexion/Plantar flexion</li> <li>• Eversion/Inversion</li> <li>• Lateral flexion</li> <li>• Ulnar/Radial deviation</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate movements of major joints of</li> </ul> <p>Upper limb-</p> <ul style="list-style-type: none"> <li>• Shoulder,</li> <li>• Elbow,</li> <li>• Wrist</li> </ul> <p>Lower limb-</p> <ul style="list-style-type: none"> <li>• Hip,</li> <li>• Knee</li> <li>• Ankle</li> </ul> <p>Trunk-</p> <ul style="list-style-type: none"> <li>• Cervical</li> <li>• Lumbar</li> </ul>	7
4. Identify and assemble the components of skeletal system.	<ul style="list-style-type: none"> <li>• .Functions of skeletal system</li> <li>• Appendicular and Axial skeleton</li> <li>• Types of bone</li> </ul>	<ul style="list-style-type: none"> <li>• Identify the bones of appendicular and axial skeleton</li> <li>• Side determination of</li> <li>• Scapula, Clavicle, Humerus</li> <li>• Radius and Ulna</li> <li>• Hip Bone, Femur, Tibia and Fibula</li> <li>• Assemble the bones of upper and lower limb</li> </ul>	16

5. Describe the joints and its classification	<ul style="list-style-type: none"> <li>• Definition of a joint</li> <li>• Structural and functional classification of joints</li> </ul>	<ul style="list-style-type: none"> <li>• Arrange bones to form joints of upper and lower limbs.</li> <li>• Shoulder joint</li> <li>• Elbow joint</li> <li>• Hip Joint</li> <li>• knee joint</li> </ul>	8
6. Describe the different types of muscles and its function.	<ul style="list-style-type: none"> <li>• Types of muscles</li> <li>• Skeletal</li> <li>• Cardiac</li> <li>• Smooth</li> <li>• Major muscles of upper limb, lower limb and trunk with their nerve supply and action</li> </ul>	<p>Demonstrate major muscles and its action.</p> <p><b>(i) Upper limb</b>-Deltoid, Biceps, Triceps, Rotator cuff muscles, Brachialis, Brachioradialis, Extensor digitorum, Extensor carpi radialis and Extensor carpi ulnaris, Flexor carpi ulnaris, Flexor carpi radialis, Flexor digitorum superficialis and muscles of hand</p> <p><b>(ii) Lower limb</b> -Gluteal muscles, Quadriceps, Hamstrings, Adductors, Gastrocnemius and soleus, Tibialis anterior, Tibialis posterior, Extensor digitorum longus</p> <p><b>(iii) Trunk</b> -Pectoralis Major, Trapezius, Latissimus dorsi, Rhomboids-Major and minor, Serratus anterior, Erector spinae, Quadratus lumborum, Abdominal muscles, Iliacus and Psoas major</p>	20
7. Briefly describe about structure and functions of nervous system	<ul style="list-style-type: none"> <li>• Classification of Nervous system</li> <li>• Basics of structure and functions of brain and spinal cord</li> </ul>	<ul style="list-style-type: none"> <li>• Identify the following (On specimen/ model)</li> <li>• Grey matter</li> <li>• White matter</li> <li>• Sulcus and Gyrus</li> <li>• Lobes of cerebrum</li> <li>• Cerebellum</li> <li>• Brain stem</li> <li>• Thalamus</li> <li>• Meninges</li> <li>• Peripheral nerves</li> </ul>	3
8. Demonstrate the	<ul style="list-style-type: none"> <li>• Respiratory rate</li> </ul>	- Measurement and	18



measurement of vital signs and BMI	<ul style="list-style-type: none"> <li>• Blood pressure</li> <li>• Pulse rate</li> <li>• Body temperature</li> <li>• BMI with Normal values</li> </ul>	documentation of the following <ul style="list-style-type: none"> <li>• Pulse</li> <li>• Temperature</li> <li>• Respiratory rate</li> <li>• Blood pressure</li> <li>• BMI</li> </ul>	
9. Describe the effects of exercise on <ul style="list-style-type: none"> <li>• Respiratory system</li> <li>• Cardiovascular system</li> <li>• Musculoskeletal system</li> </ul>	<ul style="list-style-type: none"> <li>• Briefly describe the effects of exercise on</li> </ul> Respiratory system- <ul style="list-style-type: none"> <li>• Rate of respiration</li> <li>• Depth of respiration</li> <li>• Vital capacity</li> </ul> Cardiovascular system <ul style="list-style-type: none"> <li>• Pulse rate</li> <li>• Heart rate</li> <li>• Blood pressure</li> </ul> Musculoskeletal system <ul style="list-style-type: none"> <li>• Muscle hypertrophy</li> <li>• Endurance</li> <li>• Muscle Power</li> <li>• Flexibility</li> </ul>		2
<b>Total</b>			<b>87</b>

Unit 3: Introduction to Exercise Therapy -Part 01			
Expected Learning Outcome	Theory (13 hrs)	Practical (27 hrs)	Duration (40 hrs)
1. Explain the different types of therapeutic exercise.	- Fundamental and derived Positions - Introduction to movements <ul style="list-style-type: none"> <li>• Passive range of motion exercises</li> <li>• Active assisted ROM exercise</li> <li>• Active ROM exercises</li> <li>• Free exercises</li> <li>• Resisted Exercise</li> <li>• Isometric exercise</li> <li>• Isotonic Exercise</li> <li>• Isokinetic Exercise</li> </ul> - .Relaxation	- Demonstration and Preparation of the client for upper limb and lower limb passive ROM exercise. - Demonstration of assisted, free, and resisted exercises. Relaxation Techniques- <ul style="list-style-type: none"> <li>• Contrast Method</li> <li>• Deep Breathing</li> <li>• Yoga Relaxation (Savasana)</li> </ul>	14
2. Describe muscle grading and Demonstrate the Manual muscle testing	<ul style="list-style-type: none"> <li>• Manual muscle testing</li> <li>• MRC Grading0-5</li> </ul>	- Demonstrate the manual muscle testing procedure of following muscle. <ul style="list-style-type: none"> <li>• Deltoid</li> <li>• Biceps</li> </ul>	13

		<ul style="list-style-type: none"> <li>• Triceps</li> <li>• Quadriceps</li> <li>• Hamstring</li> </ul>	
3. Differentiate aerobic and anaerobic exercise	<p>Explain the terms</p> <ul style="list-style-type: none"> <li>• Aerobic and anaerobic exercise.</li> <li>• Endurance</li> <li>• Fatigue</li> <li>• Sets and Repetitions</li> <li>• Frequency</li> <li>• Intensity</li> <li>• Duration</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstration of Aerobic exercises</li> <li>• Jogging</li> <li>• Static cycle</li> <li>• Elliptical training</li> </ul> <p>Demonstration of anaerobic exercises</p> <ul style="list-style-type: none"> <li>• Push-up</li> <li>• Bench press</li> <li>• Dumbbell/Barbell exercises.</li> </ul>	9
4. Identify good and poor posture	<ul style="list-style-type: none"> <li>- Definition of posture</li> <li>- Good and poor posture</li> <li>- Causes of poor posture</li> <li>- Postural deformities –</li> <li>• Forward head posture</li> <li>• Scoliosis,</li> <li>• Kyphosis,</li> <li>• Lordosis</li> </ul>	<ul style="list-style-type: none"> <li>- Demonstration of poor posture</li> <li>• Forward head posture</li> <li>• Scoliosis</li> <li>• Kyphotic posture</li> <li>• Lordotic posture.</li> </ul>	4
<b>Total</b>			<b>40</b>

**Unit 4 : Infection Control and Occupational Hazards**

<b>Expected Learning Outcome</b>	<b>Theory (8 hrs)</b>	<b>Practical (14 hrs)</b>	<b>Duration (22 hrs)</b>
1. Describe modes of transmission of infections	<p>Modes of transmission</p> <ul style="list-style-type: none"> <li>- Direct</li> <li>• Person to person contact</li> <li>• Droplet spread</li> <li>-Indirect</li> <li>• Airborne Transmission</li> <li>• Contaminated objects</li> <li>• Food and drinking water</li> <li>• Animal to person contact</li> <li>• Insect bites</li> <li>• Environmental reservoirs</li> </ul>		1
2. Develop skill in infection control	<ul style="list-style-type: none"> <li>• Importance of infection control</li> <li>• Personal Hygiene</li> <li>• Personal protective equipment</li> <li>• Cleaning and disinfection of devices</li> </ul>	<p>Practice:</p> <ul style="list-style-type: none"> <li>• Hand washing techniques</li> <li>• Donning and doffing of gloves and mask</li> <li>• Disinfection of</li> </ul>	9

## ASSISTANT PHYSIOTHERAPIST

		electrodes and probes	
3. List out the occupational hazards, prevention and first aid	<ul style="list-style-type: none"> <li>• Electric shock</li> <li>• Burns</li> <li>• Falls</li> <li>• Radiation</li> <li>• Injury due to faulty handling</li> </ul>	<ul style="list-style-type: none"> <li>• Checking electrical connections and cables of physiotherapy devices</li> <li>-First aid management of               <ul style="list-style-type: none"> <li>• Electric shock</li> <li>• Burns</li> <li>• Falls</li> <li>• Radiation</li> </ul> </li> </ul>	12
<b>Total</b>			<b>22</b>

### CLASS 12

#### Part A: Employability Skills

Sl.No.	Units	Duration (hrs)
1.	Communication Skills- IV	25
2.	Self-management Skills - IV	25
3.	Information and Communication Technology Skills - IV	20
4.	Entrepreneurial Skills - IV	25
5.	Green Skills - IV	15
<b>Total</b>		<b>110</b>

#### Unit 1: Communication Skills - IV

Expected Learning Outcome	Theory (10 hrs)	Practical (15 hrs)	Duration (25 hrs)
1. Describe the steps to active listening skills	<ul style="list-style-type: none"> <li>• Importance of active listening at workplace</li> <li>• Steps to active listening</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstration of the key aspects of becoming active listener</li> <li>• Preparing posters of steps for active listening</li> </ul>	10
2. Demonstrate basic writing skills	- Writing skills to the following: <ul style="list-style-type: none"> <li>• Sentence</li> <li>• Phrase</li> <li>• Kinds of Sentences</li> <li>• Parts of Sentence</li> <li>• Parts of Speech</li> <li>• Articles</li> <li>• Construction of a Paragraph</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstration and practice of writing sentences and paragraphs on topics related to the subject</li> </ul>	15
<b>Total</b>			<b>25</b>

<b>Unit 2: Self-Management Skills – IV</b>			
<b>Expected Learning Outcome</b>	<b>Theory (10 hrs)</b>	<b>Practical (15 hrs)</b>	<b>Duration (25 hrs)</b>
1. Describe the various factors influencing self-motivation	<ul style="list-style-type: none"> <li>Finding and listing motives (needs and desires);</li> <li>Finding sources of motivation and inspiration (music, books, activities); expansive thoughts; living fully in the present moment; dreaming big</li> </ul>	<ul style="list-style-type: none"> <li>Group discussion on identifying needs and desire</li> <li>Discussion on sources of motivation and inspiration</li> </ul>	<b>10</b>
2. Describe the basic personality traits, types and disorders	<ul style="list-style-type: none"> <li>Describe the meaning of personality</li> <li>Describe how personality influence others</li> <li>Describe basic personality traits</li> <li>Describe common personality disorders- paranoid, antisocial, schizoid, borderline, narcissistic, avoidant, dependent and obsessive</li> </ul>	<ul style="list-style-type: none"> <li>Demonstrate the knowledge of different personality types</li> </ul>	<b>15</b>
<b>Total</b>			<b>25</b>

<b>Unit 3: Information and Communication Technology Skills - IV</b>			
<b>Expected Learning Outcome</b>	<b>Theory (06 hrs)</b>	<b>Practical (14 hrs)</b>	<b>Duration (20 hrs)</b>
1. Perform tabulation using spreadsheet application	<ul style="list-style-type: none"> <li>Introduction to spreadsheet application</li> <li>Spreadsheet applications</li> <li>Creating a new worksheet</li> <li>Opening workbook and entering text</li> <li>Resizing fonts and styles</li> <li>Copying and moving</li> <li>Filter and sorting</li> <li>Formulas and functions</li> <li>Password protection.</li> </ul>	<ul style="list-style-type: none"> <li>- Demonstration and practice on the following:               <ul style="list-style-type: none"> <li>Introduction to the spreadsheet application</li> <li>Listing the spreadsheet applications</li> <li>Creating a new worksheet</li> <li>Opening the workbook and enter text</li> <li>Resizing fonts and styles</li> <li>Copying and move the cell data</li> <li>Sorting and Filter the</li> </ul> </li> </ul>	<b>10</b>

	<ul style="list-style-type: none"> <li>• Printing a spreadsheet.</li> <li>• Saving a spreadsheet in various formats.</li> </ul>	<ul style="list-style-type: none"> <li>• data</li> <li>• Applying elementary formulas and functions</li> <li>• Protecting the spreadsheet with password</li> <li>• Printing a spreadsheet</li> <li>• Saving the spreadsheet in various formats.</li> </ul>	
2. Prepare presentation using presentation application	<ul style="list-style-type: none"> <li>• Introduction to presentation</li> <li>• Software packages for presentation</li> <li>• Creating a new presentation</li> <li>• Adding a slide</li> <li>• Deleting a slide</li> <li>• Entering and editing text</li> <li>• Formatting text</li> <li>• Inserting clipart and images</li> <li>• Slide layout</li> <li>• Saving a presentation</li> <li>• Printing a presentation document.</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstration and practice on the following:</li> <li>• Listing the software packages for presentation</li> <li>• Explaining the features of presentation</li> <li>• Creating a new presentation</li> <li>• Adding a slide to presentation.</li> <li>• Deleting a slide</li> <li>• Entering and edit text</li> <li>• Formatting text</li> <li>• Inserting clipart and images</li> <li>• Sliding layout</li> <li>• Saving a presentation</li> <li>• Printing a presentation document</li> </ul>	<b>10</b>
<b>Total</b>			<b>20</b>

Unit 4: Entrepreneurial Skills - IV			
Expected Learning Outcome	Theory (10 hrs)	Practical (15 hrs)	Duration (25 hrs)
1. Identify the general and entrepreneurial behavioural competencies	<ul style="list-style-type: none"> <li>• Barriers to becoming entrepreneur</li> <li>• Behavioural and entrepreneurial competencies – adaptability/decisiveness, initiative/perseverance, interpersonal skills, organizational skills, stress management, valuing service and diversity</li> </ul>	<ul style="list-style-type: none"> <li>• Administering self-rating questionnaire and score responses on each of the competencies</li> <li>• Collect small story/ anecdote of prominent successful entrepreneurs</li> <li>• Identify entrepreneurial competencies reflected in each story and connect it to the definition of</li> </ul>	10

		behavioural competencies • Preparation of competencies profile of students	
2. Demonstrate the knowledge of self-assessment of behavioural competencies	• Entrepreneurial competencies in particular: self-confidence, initiative, seeing and acting on opportunities, concern for quality, goal setting and risk taking, problem solving and creativity, systematic planning and efficiency, information seeking, persistence, influencing and negotiating, team building	• Games and exercises on changing entrepreneurial behaviour and development of competencies for enhancing self-confidence, problem solving, goal setting, information seeking, team building and creativity	15
<b>Total</b>			<b>25</b>

Unit 5: Green Skills - IV			
Expected Learning Outcome	Theory (05 hrs)	Practical (10 hrs)	Duration (15 hrs)
1. Identify the role and importance of green jobs in different sectors	<ul style="list-style-type: none"> <li>• Role of green jobs in toxin-free homes,</li> <li>• Green organic gardening, public transport and energy conservation,</li> <li>• Green jobs in water conservation</li> <li>• Green jobs in solar and wind power, waste reduction, reuse and recycling of wastes,</li> <li>• Green jobs in green tourism</li> <li>• Green jobs in building and construction</li> <li>• Green jobs in appropriate technology</li> <li>• Role of green jobs in Improving energy and raw materials use</li> <li>• Role of green jobs in limiting greenhouse gas emissions</li> <li>• Role of green jobs minimizing waste and pollution</li> <li>• Role of green jobs in protecting and restoring ecosystems</li> <li>• Role of green jobs in support adaptation to the effects of climate change</li> </ul>	<ul style="list-style-type: none"> <li>• Listing of green jobs and preparation of posters on green job profiles</li> <li>• Prepare posters on green jobs.</li> </ul>	15
<b>Total</b>			<b>15</b>

Part B–Vocational Skills

Sl.No.	Units	Duration (hrs)
1.	Unit 01: Introduction to Exercise Therapy (Part-2)	51
2.	Unit 02: Introduction to Chest Physiotherapy	12
3.	Unit 03: Introduction to Electrotherapy	46
4.	Unit 04: Introduction to Orthopaedic Conditions	19
5.	Unit 05: Introduction to Neurological Conditions	24
6.	Unit 06: Introduction to Orthotics and Prosthetics	13
	<b>Total</b>	<b>165</b>

Unit 1: Introduction to Exercise Therapy -Part 02

Expected Learning Outcome	Theory (18 hrs)	Practical (33 hrs)	Duration (51 hrs)
1. Explain the process of human locomotion	<ul style="list-style-type: none"> <li>• Definition of gait</li> <li>• Phases of gait cycle</li> </ul>	<ul style="list-style-type: none"> <li>➤ Demonstration of gait cycle</li> <li>➤ Measurement of                             <ul style="list-style-type: none"> <li>• Stride length</li> <li>• Step length</li> <li>• Cadence</li> </ul> </li> </ul>	10
2. Demonstration of walking with assistive devices	Different types of walking Aids <ul style="list-style-type: none"> <li>• Crutches-</li> <li>• Axillary crutches</li> <li>• Elbow crutches</li> <li>• Forearm crutches</li> <li>• Canes</li> <li>• Walking frames</li> <li>• Gait training by using axillary crutches</li> </ul>	<ul style="list-style-type: none"> <li>➤ Practice gait training using walking aids:                             <ul style="list-style-type: none"> <li>• Non weight bearing</li> <li>• Partial weight bearing</li> <li>• Full weight bearing</li> <li>• Stair climbing- Ascending and descending</li> </ul> </li> </ul>	10
3. Demonstration of transfer techniques	Brief idea about Parts of Wheel chair Transfer techniques- <ul style="list-style-type: none"> <li>• Sliding board transfers</li> <li>• Pivot transfers</li> </ul>	<ul style="list-style-type: none"> <li>➤ Practice transfer of the patient from                             <ul style="list-style-type: none"> <li>• Bed to wheelchair</li> <li>• Wheelchair to bed</li> </ul> </li> </ul>	12
4. Demonstration of joint range of motion	Explain Range of motion Normal Range of Motion of following joints <ul style="list-style-type: none"> <li>• Shoulder</li> <li>• Elbow</li> <li>• Hip</li> <li>• Knee</li> </ul>	<ul style="list-style-type: none"> <li>➤ Measurement of ROM of following joints by using Goniometer                             <ul style="list-style-type: none"> <li>• Elbow-Flexion and Extension</li> <li>• Knee -Flexion and Extension</li> </ul> </li> </ul>	4
5. Identify exercise therapy equipment and its use	<ul style="list-style-type: none"> <li>• Uses of following equipment</li> <li>• Suspension therapy unit</li> <li>• Static cycle</li> </ul>	<ul style="list-style-type: none"> <li>• Identify the following equipment and prepare for treatment</li> </ul>	15

	<ul style="list-style-type: none"> <li>• Treadmill</li> <li>• Quadriceps Table</li> <li>• Shoulder Wheel</li> <li>• Abduction ladder</li> <li>• Parallel bar</li> <li>• Hand exerciser</li> <li>• Medicine ball</li> <li>• Swiss ball</li> <li>• Wobble board</li> <li>• Weight cuff</li> <li>• Dumbbell</li> <li>• Overhead pulley</li> <li>• Wheel chair</li> <li>• Tilt table</li> <li>• Crutches</li> <li>• Elliptical Trainer</li> <li>• TheraBand/tube</li> <li>• Exercise mat</li> <li>• Foam roller</li> <li>• Mirror</li> <li>• Foot stool</li> <li>• Corner stairs</li> <li>• Traction table</li> <li>• Standing Table</li> <li>• Wall bar</li> <li>• Rowing machine</li> <li>• Ankle exerciser</li> <li>• Peg board</li> </ul>	<ul style="list-style-type: none"> <li>• Suspension therapy unit</li> <li>• Static cycle</li> <li>• Treadmill</li> <li>• Quadriceps Table</li> <li>• Shoulder Wheel</li> <li>• Abduction ladder</li> <li>• Parallel bar</li> <li>• Hand exerciser</li> <li>• medicine ball</li> <li>• Swiss ball</li> <li>• Wobble board</li> <li>• weight cuff</li> <li>• Dumbbell</li> <li>• Overhead pully</li> <li>• Wheel chair</li> <li>• Tilt table</li> <li>• crutches</li> <li>• Elliptical Trainer</li> <li>• TheraBand/tube</li> <li>• Exercise mat</li> <li>• Foam roller</li> <li>• Mirror</li> <li>• Foot stool</li> <li>• Corner stairs</li> <li>• Traction table</li> <li>• Standing Table</li> <li>• Wall bar</li> <li>• Rowing Machine</li> <li>• Ankle exerciser</li> <li>• Peg board</li> </ul>	
<b>Total</b>			<b>51</b>

Unit 2: Introduction to Chest Physiotherapy			
Expected Learning Outcome	Theory (4 hrs)	Practical (8 hrs)	Duration (12 hrs)
1. Explain Chest Physiotherapy	- Aims of Chest Physiotherapy Common conditions for Chest Physiotherapy <ul style="list-style-type: none"> <li>• Chronic obstructive pulmonary disease (COPD)</li> <li>• Bronchiectasis</li> <li>• Atelectasis</li> <li>• Immobility</li> <li>• Surgery</li> </ul> - Techniques used in Chest physiotherapy - Lung volume and capacities <ul style="list-style-type: none"> <li>• Tidal volume</li> </ul>	<ul style="list-style-type: none"> <li>• Preparation of patient for chest Physiotherapy</li> <li>• Use of spirometer</li> </ul>	12



	<ul style="list-style-type: none"> <li>• Residual volume</li> <li>• Vital capacity</li> <li>• Total lung capacity</li> </ul>		
2. Describe Breathing Exercise	<ul style="list-style-type: none"> <li>➤ Explain the different types of Breathing Exercise</li> <li>• Inspiratory</li> <li>• Expiratory</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstration of pursed lip and diaphragmatic breathing</li> </ul>	5
<b>Total</b>			<b>17</b>

Unit 3: Introduction to Electrotherapy			
Expected Learning Outcomes	Theory (15 hrs)	Practical (31 hrs)	Duration (46 hrs)
1. Describe Electrotherapy	<ul style="list-style-type: none"> <li>• Explain electrotherapy.</li> <li>• Effects and uses of electrotherapy</li> <li>• Classification of electrotherapy equipment's based on frequency</li> </ul>		3
2. Identify Electrotherapy Equipment's and its uses	<ul style="list-style-type: none"> <li>- Uses of Following Electro therapy equipment's</li> <li>• Infra-red radiation</li> <li>• Therapeutic ultrasound</li> <li>• Short wave Diathermy</li> <li>• Interferential Therapy</li> <li>• Transcutaneous electric nerve stimulator</li> <li>• Electrical Muscle stimulator</li> <li>• Hydrocollator tank and hot packs</li> <li>• Cold pack unit and Ice packs</li> <li>• Wax bath unit</li> <li>• Traction unit</li> <li>• Continuous Passive movement machine</li> </ul>	<ul style="list-style-type: none"> <li>- Identify the following Equipment's</li> <li>• Infra-red radiation</li> <li>• Therapeutic ultrasound</li> <li>• Shortwave Diathermy</li> <li>• Interferential Therapy</li> <li>• Transcutaneous electric nerve stimulator</li> <li>• Electrical Muscle stimulator</li> <li>• Hydrocollator tank and hot packs</li> <li>• Cold pack unit and Ice packs</li> <li>• Wax bath unit</li> <li>• Traction unit</li> <li>• Continuous Passive movement machine</li> </ul>	35
3. Demonstrate the basic skills in preparation of treatment area and patient for physiotherapy		<ul style="list-style-type: none"> <li>• Preparation of patient and cubicle for various electrotherapy treatments</li> <li>• Checking temperature of hydro collator and cold pack unit</li> </ul>	8

		<ul style="list-style-type: none"> <li>Preparation of patient for Cryotherapy and Thermotherapy</li> </ul>	
<b>Total</b>			<b>46</b>

<b>Unit 4: Introduction to Orthopaedic Conditions</b>			
<b>Expected Learning Outcome</b>	<b>Theory (8 hrs)</b>	<b>Practical (11 hrs)</b>	<b>Duration (19 hrs)</b>
1. Explain common Orthopaedic conditions	<ul style="list-style-type: none"> <li>Introduction to Orthopaedics</li> <li>Briefly Describe                             <ul style="list-style-type: none"> <li>Fracture and Types of Fracture</li> <li>Dislocation and Subluxation</li> <li>Sprain and Strain</li> <li>Osteoarthritis ,</li> <li>Rheumatoid arthritis</li> <li>Spondylosis</li> <li>Tennis elbow</li> <li>Golfer’s Elbow</li> <li>Plantar fasciitis</li> <li>Amputation</li> <li>Peri arthritic Shoulder</li> </ul> </li> </ul>		5
2. Develop skill in basic orthopaedic management	<ul style="list-style-type: none"> <li>Crepe Bandaging</li> <li>PRICE</li> </ul>	<ul style="list-style-type: none"> <li>Practice Crepe Bandaging for Lateral ligament injury</li> <li>Management of Sprain and Strain-PRICE</li> </ul>	9
<b>Total</b>			<b>14</b>

<b>Unit 5: Introduction to Neurological Conditions</b>			
<b>Expected Learning Outcome</b>	<b>Theory (12hrs)</b>	<b>Practical (12hrs)</b>	<b>Duration (24 hrs)</b>
1. Describe neurological terms	Define the following <ul style="list-style-type: none"> <li>Rigidity</li> <li>Spasticity</li> <li>Flaccidity</li> <li>Monoplegia</li> <li>Hemiplegia</li> <li>Quadriplegia</li> <li>Tetraplegia</li> <li>Monoparesis</li> <li>Hemiparesis</li> <li>Quadriparesis-</li> <li>Paresthesia</li> <li>Hypertrophy and Atrophy</li> </ul>		2
2. Explain common neurological	Introduction to Neurology Causes and Symptoms of	<ul style="list-style-type: none"> <li>Positioning of Hemiplegic patients</li> </ul>	22

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condition	<ul style="list-style-type: none"> <li>• Cerebro Vascular Accidents</li> <li>• Parkinsonism</li> <li>• Ataxia</li> <li>• Spinal cord injury- Quadriplegia, Paraplegia, Cauda equina syndrome</li> <li>• Peripheral Nerve Injury- Claw hand, Wrist drop, Foot drop, Erb’s palsy Klumpke palsy.</li> <li>• Multiple Sclerosis</li> <li>• Guillain Barre Syndrome</li> <li>• Epilepsy</li> <li>• Bell’s palsy</li> <li>• Muscular Dystrophy</li> <li>• Traumatic Brain Injury</li> </ul>	<ul style="list-style-type: none"> <li>• Preparation of patient for Passive movements</li> <li>• Positioning of Paraplegic patient</li> <li>• Positioning of Quadriplegic patient</li> </ul>	
<b>Total</b>			<b>24</b>

**Unit 6: Introduction to Orthotics and Prosthetics**

Expected Learning Outcome	Theory (3 hrs)	Practical (10 hrs)	Duration (13 hrs)
1. Identify common orthotic Appliances	<ul style="list-style-type: none"> <li>• Define Orthotics</li> <li>• Ankle Foot Orthosis</li> <li>• Knee Ankle Foot Orthosis</li> <li>• Hip Knee Ankle Foot Orthosis</li> <li>• Hinged Knee Brace</li> <li>• Cervical Collar</li> <li>• Lumbar Corset</li> <li>• Abdominal binder</li> <li>• Cock up Splint</li> <li>• Shoulder Sling</li> </ul>	<ul style="list-style-type: none"> <li>• Wearing and removal of following orthotics</li> <li>• Ankle foot Orthosis</li> <li>• Knee ankle foot orthosis</li> <li>• HipKneeAnkle foot orthosis</li> <li>• Hinged Knee brace</li> <li>• Cervical collar</li> <li>• Lumbar corset</li> <li>• Abdominal binder</li> <li>• Cockup splint</li> <li>• Shoulder sling</li> </ul>	10
2. Identify common prosthetics	<ul style="list-style-type: none"> <li>• Define Prosthetics</li> <li>• SACH Foot</li> <li>• Jaipur Foot</li> <li>• Below Knee Prosthesis</li> <li>• Above Knee Prosthesis</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	3
<b>Total</b>			<b>13</b>

## 6. ORGANISATION OF FIELD VISITS/ON-THE-JOB TRAINING

The Collaboration between schools and industries is very important in vocational education, which aims to impart employable competencies in the students in this unique stream of education. Theoretical knowledge as well as practical experience is necessary for the execution of an industrial job or process. The theoretical knowledge could be imparted in school but the necessary practical skill could only be effectively imparted through exposure to the real work. This could be achieved through On the Job Training (OJT). Four days On the Job Training (OJT) is recommended for this job role during first year may be carried out depending upon the availability of the OJT centres probably during September-October.

In field visits, students will go outside the classroom to obtain specific information from experts or to make observations of the activities. Principals and Teachers should identify the different opportunities for field visits within a short distance from the school and make necessary arrangements for the visits. In first year, at least 3 field visits/educational tours should be organized for the students to expose them to the activities in the workplace.

During the visit students should obtain the following information from the physiotherapist in charge of the Physiotherapy Centre.

1. Layout of the physiotherapy department.
2. Modifications made for physically challenged clients in the physiotherapy department.
3. Patient registration, follow up and discharge criteria.
4. Electrotherapy and exercise therapy equipment's used in the department.
5. Observation of treatment procedures and techniques.
6. Safety measures, precautions, biowaste management.
7. Safe transfer and handling of patients in the physiotherapy centre
8. Basic knowledge about Prosthetic and Orthotic training.
9. Outdoor and indoor activities in special schools.
10. Ethical aspects in clinical practice.

### Suggested centres for Field visit

- Physiotherapy and Rehabilitation Department
- Special Schools
- Orthotic and Prosthetic Centre
- Geriatric centre
- Pain and Palliative centre

## 7. LIST OF EQUIPMENT AND MATERIALS

The list given below is suggestive and an exhaustive list should be prepared by the vocational teacher. Only basic tools, equipment and accessories should be procured by the Institution so that the routine tasks can be performed by the students regularly for practice and acquiring adequate practical experience.

1. Plinth	22. Short Wave Diathermy
2. Dumb bells 2,3,4,5, kg	23. Shoulder Wheel
3. Barbells	24. Infra-Red Radiation
4. Free weight plates	25. Thera band
5. Cables	26. Spirometer
6. Tubing's	27. Spongy ball
7. Weight cuffs	28. Exercise mat
8. Static cycle	29. Thermometer
9. Treadmill	30. Measuring tape
10. Elliptical trainer	31. Parallel Bar
11. Ice packs	32. Crutches
12. Hydro collator tank and packs	33. Cane
13. First aid box	34. Steps
14. Slings\ Splints	35. Swiss Ball
15. Crepe bandage	36. Hand Exerciser
16. Quadriceps table	37. Wheel chair
17. Wax bath machine	38. Stethoscope
18. Electrical muscle stimulator	39. BP apparatus
19. Ultra sound	40. Bone and skeletal set
20. Interferential Therapy	41. Goniometer
21. Transcutaneous Electric Nerve Stimulator	42. Inclinator
	43. Dumbbell rack

## 8. LIST OF CONTRIBUTORS

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