TASK-ORIENTED APPROACH

Skill	Aircraft Maintenance (Airframe)

Training schedule:

This training schedule is tailored to offer participants a thorough comprehension of airframe maintenance principles and tools specific to structural maintenance in sheet metal, electrical systems, conducting inspections, and post-maintenance documentation. The program spans a total of 300 hours, comprising a blend of theoretical teachings and practical hands-on sessions. The primary objective is to equip participants with foundational skills essential for intermediate airframe maintenance on the following subjects:

- Safety and Ground Operation
- Metrology
- Aircraft Drawings
- General Standard Practices
- Electrical Standard Practices
- Fundamentals of Sheet Metal Fabrication
- Aircraft Structures
- Aircraft hydraulic and pneumatic systems
- Rigging Flight Controls
- Aircraft Manual assembly
- Forms and Documentation System
- Sheet Metal Structural Damage Inspection
- Sheet Metal Structural Damage Repair
- Schedules Inspections
- Unscheduled Inspection
- Electrical Troubleshooting
- Fueling and Defueling

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Trainer: Rafael de Borba
Date: 29 / 12 / 2023

	Expected time to achieve the skill working 4 days a week 3 hours per day (12 hours of training)																										
	Topic	Hands-on training hours	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14	Week 15	Week 16	Week 17	Week 18	Week 19	Week 20	Week 21	Week 22	Week 23	Week 24	Week 25
Foundation Level	Safety and Ground Operation	9h	■																								
	Metrology	6h	■																								
	Aircraft Drawings	3h		■																							
	General Standard Practices	18h			■																						
	Electrical Standard Practices	18h				■																					
	Fundamentals of Sheet Metal Fabrication	27h					■	■																			
	Aircraft Structures	9h							■																		
	Aircraft hydraulic and pneumatic systems	9h							■																		
	Rigging Flight Controls	24h								■	■																
	Aircraft Manual assembly	9h									■																
Employable Level	Forms and Documentation System	18h										■															
	Sheet Metal Structural Damage Inspection	21h											■	■													
	Sheet Metal Structural Damage Repair	36h													■	■											
	Scheduled Inspections	36h															■	■									
	Unscheduled Inspection	18h																	■	■							
	Electrical Troubleshooting	30h																				■	■				
	Fueling and Defueling	16h																							■	■	

To fulfill the necessary training hours for the employable level, the student must undergo 300 hours of hands-on training spread across 25 weeks. This involves active participation for 12 hours each week.

TASK-ORIENTED APPROACH

Skill	Automobile Technology

Training schedule:

The objective of this training program in Automobile Technology is to equip students with the necessary theoretical knowledge and practical skills to excel in the automotive industry. The program aims to produce skilled professionals who can effectively diagnose, maintain, repair, and innovate modern automotive systems while adhering to safety and environmental standards. The program covers a total of 300 hours, with the tasks being mostly practical. The objective is to provide participants with the necessary skills to serve the industry on the topics:

- Introduction to Automobile Technology
  - Overview of the automotive industry and its history
  - Basic automotive terminologies and concepts
  - Introduction to automotive systems and their functions
- Automotive Electrical Systems
  - Fundamentals of electrical circuits and components
  - Understanding wiring diagrams and schematics
  - Introduction to automotive electronics and computer systems
- Automotive Engine Fundamentals
  - Internal combustion engine principles
  - Engine components and their functions
  - Introduction to engine diagnostics and tuning
- Brake Systems and Safety
  - Types of braking systems (disc, drum, ABS)
  - Brake components and maintenance
  - Understanding safety protocols and regulations
- Automotive Suspension and Steering
  - Suspension components and types
  - Steering systems and alignments
  - Diagnosing and troubleshooting common issues
- Automotive Transmission and Drivetrain
  - Automatic and manual transmission systems
  - Different types of drivetrains (FWD, RWD, AWD)
  - Clutches, differentials, and gear ratios

- Advanced Engine Diagnostics
    - Engine performance analysis
    - Emission control systems
    - Introduction to hybrid and electric vehicle technologies
- Automotive Heating, Ventilation, and Air Conditioning Systems
    - AC components and their functions
    - Troubleshooting AC issues
    - Environmental regulations and refrigerant handling
- Automotive Diagnostics and Troubleshooting
    - Advanced diagnostic tools and techniques
    - Common automotive issues and their solutions
    - Case studies and practical problem-solving
- Automotive Innovation and Emerging Technologies
    - Introduction to autonomous vehicles
    - Vehicle-to-vehicle and vehicle-to-infrastructure communication
    - Future trends in the automotive industry
- Automotive Service and Maintenance
    - Best practices in vehicle servicing and maintenance
    - Customer service skills and effective communication
    - Workshop management and organization

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Trainer: Luis Fernando Tardivo
Date: 23 / 01 / 2023

	Topic	Hands-on training hours
Foundation Level	Introduction to Automobile Technology	20 h
	Automotive Electrical Systems	25 h
	Automotive Engine Fundamentals	30 h
	Brake Systems and Safety	25 h
	Automotive Suspension and Steering	25 h
	Automotive Transmission and Drivetrain	30 h
Employable Level	Automotive Heating, Ventilation	15 h
	Air Conditioning Systems	25 h
	Advanced Engine Diagnostics	30 h
	Automotive Diagnostics and Troubleshooting	25 h
	Automotive Innovation and Emerging Technologies	25 h
	Automotive Service and Maintenance	25 h

Expected time to achieve the skill working 4 days a week 3 hours per day (12 hours of training) — schedule spread across Week 1 to Week 25.

To fulfill the necessary training hours for the employable level, the student must undergo 300 hours of hands-on training spread across 25 weeks. This involves active participation for 4 days each week, with each session lasting 3 hours.

TASK-ORIENTED APPROACH

Skill	Electronics

Training schedule:

This training schedule is meticulously crafted to provide participants with an in-depth understanding of electronics principles and the pertinent tools essential for electronics engineering. Spanning a total of 300 hours, the program combines theoretical instruction with hands-on practical sessions. The primary objective is to empower participants with foundational skills crucial for a career in electronics, focusing on:

- Circuit Development and Analysis
- PCB Design and Layout
- Assembly and Testing of Electronic Systems
- Electronic Manufacturing Drawings
- Tolerance Analysis in Electronics
- Embedded Systems Programming
- Advanced Techniques
- Quality Control and Industry Standards
- Simulation and Prototyping
- Material Science in Electronics
- Machine Elements in Electronics
- Troubleshooting and Problem Solving
- Realistic Renderings of Electronic Systems

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Trainer: Gabriel Alves de Souza
Date: 18 / 01 / 2024

Expected time to achieve the skill working 4 days a week 3 hours per day (12 hours of training)

	Topic	Hands-on training hours	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14	W15	W16	W17	W18	W19	W20	W21	W22	W23	W24	W25
Foundation Level	Foundations of Electronics: DC Circuit Analysis	30 h	█	█	█																						
	Electronics Measurement and Testing Techniques	20 h			█	█																					
	Analog Electronics: Semiconductors	10 h					█																				
	Digital Electronics Logic and Sequential Circuits	24 h					█	█	█																		
	PCB Design: Schematic	12 h							█	█																	
	PCB Design: Layout single layer	12 h								█	█																
	Prototyping and testing: PTH techniques	12 h									█	█															
	Programming in C/C++	12 h											█														
	Microcontroller Programming Fundamentals	24 h											█	█	█												
	Foundations of Electronics: Circuit Analysis (DC and AC)	12 h														█											
Employable level	Prototyping and testing: SMD techniques	12 h															█										
	PCB Design: Multilayers techniques	12 h																█									
	Analog Electronics: Operational Amplifier	12 h																	█								
	Analog Electronics: Oscillators and signal generators	12 h																		█							
	Filters Design: Passive and Active	12 h																			█						
	Intermediate Microcontroller Programming Techniques	24 h																				█	█				
	Electronics Diagnostics and Troubleshooting	12 h																						█			
	Industry standards: Best practices for PCB Design	12 h																							█		
	Acceptability of Electronics Assemblies IPC-A-610	12 h																								█	
	Industry standards: Repair Electronics Assemblies IPC-7711/21C	12 h																									█

To fulfill the necessary training hours for the employable level, the student must undergo 300 hours of hands-on training spread across 25 weeks. This involves active participation for 4 days each week, with each session lasting 3 hours.

TASK-ORIENTED APPROACH

Skill	Autonomous Mobile Robotics

Training schedule:

This training schedule is structured to immerse participants in the multifaceted world of autonomous mobile robotics. It spans a total of 300 hours, blending theoretical instruction with practical, hands-on sessions. The objective is to provide a robust foundation in the core competencies required for designing, building, and programming autonomous mobile robots:

- Introduction to Robotics.
- Mechanical Design in Robotics.
- Electronics for Robotics.
- Arduino in Robotics.
- Robot Kinematics and Dynamics.
- Programming for Robotics in python and c++.
- Robot Operating System (ROS).
- Autonomous Navigation.
- Artificial Vision Systems in Robotics
- Additive Manufacturing for Robotics
- Simulations and Testing
- Statics and Dynamics Analysis
- Problem-Solving in Robotics
- Industry Standards and Compliance

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Trainer: Omar Garcia, Felipe Ferreira
Date: 04 / 01 / 2024

		Expected time to achieve the skill working 4 days a week 3 hours per day (12 hours of training)																								
	Topic	**Hands-on training hours**	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14	W15	W16	W17	W18	W19	W20	W21	W22	W23	W24	W25
Foundation Level	Basic Electronics for Robotics	12 h	■																								
	Arduino Programming and Use	12 h		■																							
	Integration of Sensors and Actuators	12 h			■																						
	Electronics and Prototyping Projects	12 h				■																					
	Python Programming	24 h					■	■																			
	C++ Programming Fundamentals	24 h							■	■																	
	C++ Programming for Robotics	24 h									■	■															
	Fundamentals of Mechanical Design in CAD	12 h											■														
	Basic 3D Modeling in CAD	12 h												■													
Employable Level	Introduction to ROS	24 h													■	■											
	Applications with ROS	12 h															■										
	Autonomous Navigation	24 h																■	■								
	Introduction to Computer Vision	24 h																		■	■						
	Integrative Projects in Robotics	48 h																				■	■	■			
	Advanced Topics in Robotics	24 h																							■	■	
	Industry Standards and Regulations	12 h																									■

To fulfill the necessary training hours for the employable level, the student must undergo 300 hours of hands-on training spread across 25 weeks. This involves active participation for 4 days each week, with each session lasting 3 hours.

TASK-ORIENTED APPROACH

Skill	CNC Milling

Training schedule:

This training program is designed to provide participants with a comprehensive understanding of CNC milling manufacturing engineering processes, principles and tools relevant to part shaping with the aid of computer-aided manufacturing (CAD/CAM) on a CNC milling machine. The program covers a total of 300 hours, with a combination of theoretical instruction and practical sessions. The aim is to equip participants with the basic skills needed to be employable in CNC milling machining:

- Draw 2D parts
- Create setup to machining on software CAD/CAM
- Create tool library on software CAD/CAM
- Selecting the right parameters and tool for each material
- Create 2D and 3D Toolpaths - Milling
- Generating and editing G-Code by software CAD/CAM
- Importing solid files from other CAD Software
- General operation machine
- Create tools and make presset
- Insert programs to communicate between computer and machine
- Machining parts with different difficulties
- Manage manufacturing processes

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Trainer: Mailson Oliveira
Date: 26 / 12 / 2023

	Topic	Hands-on training hours	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14	Week 15	Week 16	Week 17	Week 18	Week 19	Week 20	Week 21	Week 22	Week 23	Week 24	Week 25
Fundamental Level	Draw 2D parts on CAD/CAM software	18 h	■																								
	Draw 3D parts on CAD/CAM software	24 h		■																							
	Create setup for machining on software CAD/CAM	12 h			■																						
	Create tools library on software CAD/CAM	12 h				■																					
	Selecting the right tool for each material	6 h					■																				
	Create 2D toolpaths - Milling	12 h						■																			
	Create 3D toolpaths - Milling	24 h							■																		
	Fundamental knowledge of G-Code programming	24 h									■																
	Generating and editing G-Code by software CAD/CAM	12 h											■														
	Importing solid files from other CAD Software	18 h													■												
Employable level	Procedure to turn on/off machine	6 h														■											
	Basic operation machine (interface, movement (JOG), MDA/MDI)	6 h															■										
	Create tools and make presset	18 h																■									
	Insert programs to communicate between computer and machine	6 h																	■								
	Machining parts with 2 sides	18 h																		■							
	Machining parts with 3 sides	30 h																			■						
	Machining parts with Surfaces	18 h																					■				
	Machining parts with different clamping (different devises)	12 h																							■		
	Manage manufacturing processes	12 h																								■	
	Manage and choose the correct parameter for each material	12 h																									■

Expected time to achieve the skill working 4 days a week 3 hours per day (12 hours of training)

To complete the required training hours for the employable level, the student needs 300 hours of hands-on training over a period of 25 weeks. This entails working 4 days a week, with each session lasting 3 hours.

TASK-ORIENTED APPROACH

Skill	CNC Turning

Training schedule:

This training program is designed to provide participants with a comprehensive understanding of CNC turning manufacturing engineering processes, principles and tools relevant to part shaping with the aid of computer-aided manufacturing (CAD/CAM) on a CNC turning machine. The program covers a total of 300 hours, with a combination of theoretical instruction and practical sessions. The aim is to equip participants with the basic skills needed to be employable in CNC turning machining:

- Draw 2D parts
- Create setup to machining on software CAD/CAM
- Create tool library on software CAD/CAM
- Selecting the right parameters and tool for each material
- Create 2D and 3D Toolpaths - Turning
- Generating and editing G-Code by software CAD/CAM
- Importing solid files from other CAD Software
- General operation machine
- Create tools and make preset
- Insert programs to communicate between computer and machine
- Machining parts with different difficulties
- Manage manufacturing processes

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Trainer: Jacques Prado
Date: 26 / 12 / 2023

	Expected time to achieve the skill working 4 days a week 3 hours per day (12 hours of training)		
	Topic	Hands-on training hours	Week 1 – Week 25
Foundation Level	Draw 2D parts on CAD/CAM software	18 h	
	Draw 3D parts on CAD/CAM software	24 h	
	Create setup to machining on software CAD/CAM	12 h	
	Create tool library on software CAD/CAM	12 h	
	Selecting the right tool for each material	6 h	
	Create 2D toolpaths - Turning	24 h	
	Create 3D toolpaths - Turning	12 h	
	Fundamental knowledge of G-Code programming	24 h	
	Generating and editing G-Code by software CAD/CAM	12 h	
	Importing solid files from other CAD Software	18 h	
Employable level	Procedure to turn on/off machine	6 h	
	Basic operation machine (interface, moviment (JOG), MDA/MDI	6 h	
	Create tools and make presset	18 h	
	Insert programs to communicate between computer and machine	6 h	
	Machining parts with external geometries	18 h	
	Machining parts with external and internal geometries	30 h	
	Machining parts with turned and milled geometries	18 h	
	Machining parts with different clamping (different devices)	12 h	
	Manage manufacturing processes	12 h	
	Manage and choose the correct parameter for each material	12 h	

To fulfill the necessary training hours for the employable level, the student must undergo 300 hours of hands-on training spread across 25 weeks. This involves active participation for 4 days each week, with each session lasting 3 hours.

TASK-ORIENTED APPROACH

Skill	Mechanical Engineering CAD

Training schedule:

This training schedule is designed to provide participants with a comprehensive understanding of Computer-Aided Design (CAD) principles and tools relevant to mechanical engineering. The schedule spans a total of 300 hours, with a combination of theoretical instruction and practical hands-on sessions. The goal is to equip participants with foundational skills necessary for intermediate mechanical design using CAD software:

- CAD for Mechanical Design.
- Mechanical Design Principles
- Manufacturing processes and Assembly
- Manufacturing drawings
- Tolerance Analysis and GD&T
- Weldment processes
- Reverse Engineering using 3D Scanner
- Designing for Additive Manufacturing
- Simulations and Realistic Renderings
- Material Science and Selection
- Machine Elements and Mechanisms
- Statics and Dynamics Analysis
- Problem solving
- Industry Standards

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Trainer: Gustavo Pina Lima
Date: 26 / 12 / 2023

	Expected time to achieve the skill working 4 days a week 3 hours per day (12 hours of training)

	Topic	Hands-on training hours
Foundation Level	3D parametric modeling	40 h
	3D Assembly and Explosion techniques	30 h
	Parametric sheet metal modeling	10 h
	2D mechanical drawings	20 h
	Bill of materials	5 h
	Weldment profiles	5 h
	Welding symbols	5 h
	Structural frames	10 h
	Metrology and inspection techniques	5 h
	Reverse Engineering using 3D Scanner	15 h
Employable Level	Surface modeling	10 h
	Advanced 3D modeling techniques	20 h
	Advanced assembly modeling	20 h
	Simulation and realistic renderings	15 h
	Parametrization and programming	10 h
	Designing for additive manufacturing	15 h
	Gears and belts systems	20 h
	Shaft, couplings, and bearings systems	10 h
	Cam, splines, and springs systems	10 h
	Design and improving products	25 h

Week columns: Week 1 – Week 25

To fulfill the necessary training hours for the employable level, the student must undergo 300 hours of hands-on training spread across 25 weeks. This involves active participation for 4 days each week, with each session lasting 3 hours.

TASK-ORIENTED APPROACH

Skill	Electrical Installations

Training schedule:

The objective of this 300 hours training program in Electrical Installations is to equip students with the necessary theoretical knowledge and practical skills to excel in the Electrical Installations industry. The program aims to produce skilled professionals who can effectively diagnose, maintain, repair, and innovate modern Electrical Installations systems while adhering to safety and environmental standards.

- Electrical Installations
- Building electronic systems
- Electrical Codes and Standards for Residential
- Residential Wiring Techniques
- Commercial Electrical Systems
- Industrial Electrical Systems
- Electrical Motors and Control Systems
- PLC - Programmable Logic Controllers
- Automation and Smart Technologies in Electrical Systems
- Project Management for Electrical Installation Projects

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Trainer: Paulo Sergio de Medeiros Junior
Date: 26 / 12 / 2023

	Topic	Hands-on training hours	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14	Week 15	Week 16	Week 17	Week 18	Week 19	Week 20	Week 21	Week 22	Week 23	Week 24	Week 25
Foundation Level	Electrical Installations Infrastructure	50 h																									
	Residential Wiring Techniques	50 h																									
	Reading and interpreting projects	20 h																									
	Protective Devices	20 h																									
	Control panel Infrastructure	24 h																									
	Electrical Motors and Control Systems	45 h																									
Employable Level	PLC - Programmable Logic Controllers	50 h																									
	Automation and Smart Technologies in Electrical Systems	70 h																									
	Fault find	25 h																									
	Project Management for Electrical Installation Projects	30 h																									

Expected time to achieve the skill working 4 days a week 3 hours per day (12 hours of training)

To fulfill the necessary training hours for the employable level, the student must undergo 300 hours of hands-on training spread across 25 weeks. This involves active participation for 4 days each week, with each session lasting 3 hours.

TASK-ORIENTED APPROACH

Skill	Industrial Control

Training schedule:

This training schedule is designed to provide participants with a comprehensive understanding of industrial control as it relates to various aspects of the industry, including circuit design, fault finding, programming of automation devices, and infrastructure assembly. The program covers a total of 300 hours, with the tasks being mostly practical. The objective is to provide participants with the necessary skills to serve the industry on the topics:

- Circuit Design
  - Electrical fundamentals
  - Three-phase motors
  - Design of electropneumatic circuits
- Fault finding
  - Interpreting an electrical diagram
  - Panel measurements for fault detection
- Programming
  - Automation concepts – Engineering software
  - Devices & Networks
  - Programming and editing blocks
  - PLC Data types
  - Programming Languages (LD, FBD, SCL, STL, GRAPH)
  - HMI Programming
  - VSD Programming
- Structure Assembly
  - Structure assembly planning
  - Wiring
  - Commissioning
  - Startup of the plant

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Trainer: Lucas Fernando de Oliveira Santos
Date: 11 / 01 / 2023

	Expected time to achieve the skill working 4 days a week 3 hours per day (12 hours of training)		Week 1–25
Level	**Topic**	**Hands-on training hours**	
Foundation Level	Electrical fundamentals	5 h	
Foundation Level	Three-phase motors	10 h	
Foundation Level	Design of electropneumatic circuits	20 h	
Foundation Level	Interpreting an electrical diagram	5 h	
Foundation Level	Panel measurements for fault detection	5 h	
Foundation Level	Fault Finding	20 h	
Foundation Level	Automation concepts – Engineering software	10 h	
Foundation Level	Devices & Networks	10 h	
Employable Level	Programming and editing blocks	15 h	
Employable Level	PLC Data types	15 h	
Employable Level	Programming Languages (LD, FBD, SCL, STL, GRAPH)	50 h	
Employable Level	HMI Programming	15 h	
Employable Level	VSD Programming	10 h	
Employable Level	Programming an Industrial Process	25 h	
Employable Level	Structure assembly planning	5 h	
Employable Level	Structure assembly	35 h	
Employable Level	Wiring	30 h	
Employable Level	Commissioning	5 h	
Employable Level	Startup of the plant	5 h	
Employable Level	Power up and devices setup	5 h	

To fulfill the necessary training hours for the employable level, the student must undergo 300 hours of hands-on training spread across 25 weeks. This involves active participation for 4 days each week, with each session lasting 3 hours.

TASK-ORIENTED APPROACH

Skill	Health and Social Care

Training schedule:

This comprehensive training program offers healthcare assistants a thorough understanding of essential patient care skills. With a total duration of 113 hours, it integrates theoretical learning with hands-on practical sessions to ensure a comprehensive understanding of healthcare assistance. The primary objective is to empower participants with foundational skills crucial for a career in the health care field, focusing on:

- Infection Control and Personal Protective Measures
- First Aid Essentials: Basic Wound Management and Emergency Response
- Comprehensive General Health Assessment Techniques
- Vital Signs: Monitoring and Interpretation
- Safe Patient Positioning and Transfer Techniques
- Effective Injury Management (PRICE) and Edema Protocol
- Enhancing Communication Skills in Healthcare
- Geriatric Care and Age-Related Health Considerations
- Surgical Patient Recovery and Postoperative Care
- Supporting Daily Living Activities (ADL) and Independence
- Introduction to Pediatric: Developmental Stages and Therapeutic Support

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Trainer: Shamma AlHarbi
Date: 07 / 02 / 2024

		Expected time to achieve the skill working 2 days a week 2-3 hours per day (4-5 hours of training)	
Level	Topic	Hands-on training hours	Scheduled weeks
Foundation Level	Infection control	2 h	Week 1
Foundation Level	First Aid Essential	10 h	Week 2
Foundation Level	Integumentary and Cardiovascular system	4 h	Week 3–4
Foundation Level	General Health Assessment	14 h	Week 5–6
Foundation Level	Vital Signs: Monitoring and Interpretation	8 h	Week 7
Foundation Level	Safe Patient Positioning and Transfer Techniques	6 h	Week 8–9
Foundation Level	Effective Injury and edema management (PRICE)	4 h	Week 10
Foundation Level	Foundation level revision and assessment	8 h	Week 11–12
Employable level	Effective Communication Skills	10 h	Week 13–14
Employable level	Geriatric Care	12 h	Week 15–16
Employable level	Surgical patient recovery care	15 h	Week 17–19
Employable level	Introduction to ADL Support	7 h	Week 20
Employable level	Paediatric Care	7 h	Week 21–22
Employable level	Employable level revision and assessment	6 h	Week 23

To fulfill the necessary training hours for the employable level, the student must undergo 113 hours of hands-on training spread across 25 weeks. This involves active participation for 2-3 days each week, with each session lasting 2-3 hours.