



Rev. No. Set 008 26-Jan-25

**OTTC Practical and Technical Diploma includes  
OTTC Heat-Pump Technician Apprenticeship 2025 the OTTC Trade Test and  
National SA Unit Standards Credits for SA accreditations**

*learning the profession without ballast*

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<b>Client:</b>				<b>Learner:</b>		
<b>Contact:</b>				<b>Tel. No.:</b>		
<b>Tel. No.:</b>				<b>Cell. No.:</b>		
<b>Module</b>	<b>Course</b>	<b>Content / Objective</b>		<b>Duration</b>	<b>Includes also Unit Standards</b>	<b>Price per week</b> R 7500.00
<b>1</b>	<b>MetB - 1, 2, 3, 4, 5</b>	<b>Metal Basic::</b> Health & Safety, Practical tool skills, bending, soldering, brazing, welding, arc welding, measuring, manufacturing frames, brackets, support structures etc. - implement all stages from planning, drawing, specifying to produce & manufacture components / parts for installation purposes <b>(Optional for beginners)</b>		5 weeks (33 Credits)	116234, 116335, 116241, 116245, 116696	
<b>2</b>	<b>RPI - 1, 2, 3, 4</b>	Plotting & manufacturing of refrigeration components, soldering, brazing, welding, arc welding, pipe bending with different bending methods, full pipe installation on wall, insulation of pipes, components and ducts		4 weeks (27 Credits)	116230, 116229, 116712, 116707	
<b>3</b>	<b>PR - 1/2 Technical Drawings -1</b>	Mechanical principles of refrigeration cycle and components, placement of components, functions of components, practical safe-handling of refrigerant. Technical drawings		3 weeks (47 Credits)	116236, 116224, 116239, 116699, 116334, 116355, 116700, 116702	
<b>4</b>	<b>Math/ Phys</b>	Mathematics and Physics applied in refrigeration and air-conditioning <b>(Optional for beginners)</b>		2 weeks (33 Credits)	9009, 7480, 9008, 12444, 9007, 13202, 9010, 14106, 9013, 7455, 9016	
<b>5</b>	<b>R - 1/R-2 Technical Drawings -2</b>	Mechanical principles of refrigeration cycle and components. connection of service gauges, main components, compression principles, compressor types, refrigeration cycle and components, types of heat exchangers, explaining the purpose of heat exchanging for Heat-Pump Plants. Types of expansion devices, pressure switches and thermostats, reclaiming, recharging, SAFE HANDLING OF REFRIGERANTS		2 weeks (57 Credits)	116236, 116224, 116239, 116699, 116701, 116702, 116334, 116355, 116700, 116468	
<b>6</b>	<b>ELC - 1, 2, 3, 4, 5</b>	Physical electricity basics in refrigeration, single and three phase systems, single and three phase motors, starters, pressure and temperature controllers, different control systems. Wiring diagrams for electromechanical controlling, plant protection, motor managements, suction control, defrost control. Electronic motor management, soft starter, frequency converters, electronic cold room controllers. BMS Systems Heat-Pump controls Solar Systems.		5 weeks (60 Credits)	116232, 116243, 116244, 116226, 116463, 116466, 116464, 116465	
<b>7</b>	<b>Mech</b>	Mechanical servicing of compressors, repair & overhaul skills, fault identification. Belt drives, pulley alignment. Bearing service.		1 week (18 Credits)	116233, 116713, 116715	
<b>8</b>	<b>Mobile Refr &amp; Supermarket</b>	<b>Mobile Refrigeration</b> , servicing car air-conditioners and transport air chillers. <b>Supermarket Maintenance</b> , preventative maintenance and service.		1 week (8 Credits)	116396	
<b>9</b>	<b>R - 3/4 Technical Drawings -3</b>	Advanced study of mechanical refrigeration cycle, heat load calculations, cold room design, capacity calculations, food-load, defrost methods; reversed cycles, pressure regulators, humidity control, frequency inverters, methods of energy saving, pump down Advanced study of system design, h, lg p- diagram, sizing of main components, sizing of pipe-work, oil-problems, fault finding, refrigeration cycle analysis, refrigerant types. Different methods of Heat recovery		3 weeks (66 Credits)	116697, 116717, 116418, 116408, 116461, 116389, 116375, 116415, 116397, 116406	
<b>10</b>	<b>R - 5/ R - 6,A,B,C/ R-7</b>	Plant technologies, designing of water-chillers, icemakers, different heat pumps systems, efficiency calculations, pump design, pipe work calculations. Advanced plant technologies, designing of two stage plants, cascades, multiplex systems, special purpose refrigerants ( CO <sub>2</sub> , H <sub>2</sub> O, C <sub>x</sub> H <sub>y</sub> , natural refrigerants, etc. )		5 weeks (24 Credits)	116709, 116375, 116406, 116421, 116458, 116403, 116380	
<b>11</b>	<b>RPT</b>	Design and build a Heat-Pump-Plant - Final installation, charging operating testing of diploma projects plant, fault finding, commissioning, and writing commissioning reports.		2 weeks		
<b>12</b>	<b>T - Dip</b>	<b>OTTC Heat-Pump Technician Diploma Test includes OTTC Trade Test</b>		2 weeks (29 Credits)		
<b>Quoted prices include: Work Sheets, Material, Tea, Coffee.</b>					<b>Total Credits: 402</b>	
<b>Pass mark per course 60%, pass mark for diploma test 75% theoretical and practical. Pre-requisites: literacy + numeracy. Courses are presented in English. OTTC training programmes also cover SAQA unit standards, see "OTTC LEARNERSHIP PROGRAMME". Assessments for NQF learnership qualifications and/or trade test testing can be arranged. Select your own course dates from OTTC programme. Preferred duration: spread over 3.5 years</b>					<b>35 weeks</b>	
<b>OTTC has full Accreditation by MERSETA for: Trades of Commercial &amp; Industrial Refrigeration Mechanic TA/1647/01 Provider of Education &amp; Training for the Training</b>						Full Programme Per Person For 35 weeks
<b>Of Learners at NQF Level 2,3,4 Certificate No 17-QA/ACC/2213/26</b>						
<b>OTTC – Open Trade Training Centre (Pty) Ltd - Trade Test / OTTC reserves the right to upgrade the program with new products and technics at any time.</b>						
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